

**Identification of PCE Release Areas
in the Vicinity of the Griggs and Walnut
Ground Water Plume**

Las Cruces, New Mexico

**U.S. Environmental Protection Agency
Region 6**

November 2003

[This page intentionally left blank.]

Table of Contents

Section	Page
Executive Summary	ES-1
Introduction	1
Problem Statement	1
Purpose and Scope of the Investigation	3
GWP Site History	4
Area Land Uses	4
Topography	6
Geology	6
The Extent of Observed Contamination	7
Areas of PCE Detection Beyond the Known Plume Boundaries	9
Identification of PCE Release Areas	10
Selected References	
Attachment A Principal Criteria and Process For Determining If Areas In The Vicinity Of The Griggs And Walnut Superfund Site Are Sources Of PCE Contamination In Ground Water	
Attachment B Properties and Dry Cleaners Evaluated for the Source Investigation	
Table B-1 Properties Evaluated for the Source Investigation	
Table B-2 Dry Cleaners Evaluated for the Source Investigation	
Figure B-1 Review of Properties Index Map	
Attachment C PCE in Soil Vapor and Ground Water Samples	
Table C-1 PCE Soil Vapor Analytical Results	
Table C-2 PCE Ground Water Analytical Results - December 2002	

Table of Contents, continued

List of Figures

Figure 1 Site Location Map

Figure 2 Source Investigation Sample Locations

Figure 3 Current and Former Land Use in the Site Vicinity

Figure 4 Horizontal Distribution of PCE in Soil Vapor

Figure 5 Vertical Distribution of PCE in Soil Vapor (Profile A-A')

Figure 6 Vertical Distribution of PCE in Soil Vapor (Profile B-B')

Figure 7 Vertical Distribution of PCE in Soil Vapor (Profile C-C')

Figure 8 Maximum Concentrations of PCE Detected in Soil Vapor and PCE Release Areas

Figure 9 Extent of PCE Plume and Ground Water Elevation at Water Table (December 2002)

Figure 10 Vertical Distribution of PCE in Ground Water (Profile A-A')

Figure 11 Horizontal Distribution of PCE in Ground Water

Figure 12 Vertical Distribution of PCE in Ground Water (Profile A-A')

Figure 13 Vertical Distribution of PCE in Ground Water (Profile B-B')

Executive Summary

Ground water from the eastern well field that supplies the City of Las Cruces, New Mexico (the City) with drinking water contains the dissolved solvent perchloroethylene (PCE), a potential human carcinogen. Detections of PCE were first recorded in the drinking water supply wells in 1993. The concentrations of PCE in the drinking water supply from the wells are being managed by the City to maintain levels below the Federal drinking-water standard of 5 ug/L.

The area of contamination is located beneath a developed area in the eastern side of Las Cruces and affected municipal supply wells are located near the intersection of Griggs Avenue and Walnut Street. A large portion of the surficial land area has been used for recreational facilities and light industrial activity related to City and County maintenance facilities since the late 1970's. The area of contamination was also once the location of military equipment associated with the New Mexico National Guard. The former Crawford Municipal Airport was also once located in this area. Residential neighborhoods are present in the area of investigation as well as areas of light industrial/commercial activity.

The primary purpose of the investigation was to identify specific areas where PCE was released to the environment. The principal investigative tool in this project was soil vapor analyses of the unsaturated zone above the ground water because, as a volatile organic compound, PCE in soil vapor is considered an indicator of a release at land surface. The investigation also included the collection and analysis of ground water samples using deep multi-level monitor wells to supplement existing water table monitor wells.

The field investigation included the collection of over 600 soil vapor samples, installation of 7 soil vapor monitor points, installation of 8 multi-level ground water wells, and the collection of over 200 ground water samples from new and existing wells. The locations of the greatest concentrations of PCE measured in soil vapor are near the areas of high concentrations of PCE measured in ground water. The most likely scenario for migration of PCE contamination from the original release areas to soil vapor and ground water associated with the GWP site is from low-volume spills of PCE over time onto soil, as defined by the greatest PCE concentrations in soil vapor.

From the observed extent of PCE in soil vapor and ground water, EPA has determined that three principal locations in the area of investigation had releases of PCE to the soil that migrated down to ground water over time.

On property currently owned by the City and formerly occupied by the Crawford Municipal Airport, it can be concluded from the interpretation of the data that PCE was released to the soil within or adjacent to the arroyo that once ran through the property.

On property currently owned by Doña Ana County (DAC), the current location of the DAC maintenance yard, it can be concluded from the interpretation of the data that PCE was released to the soil.

On property currently owned by the City and formerly occupied by the State of New Mexico National Guard Armory, it can be concluded from the interpretation of the data that PCE was released to the soil.

Introduction

Ground water used within the eastern portion of the City of Las Cruces, New Mexico (the City) for municipal drinking water supply and irrigation has been contaminated with perchloroethylene (PCE), also known as tetrachloroethylene. PCE, a chlorinated solvent, causes cancer in laboratory animals and is a potential human carcinogen (ATSDR, 1997). PCE has been used in the United States since the 1930's. Releases of PCE into the environment are documented at locations throughout the U.S., and are generally associated with past dry-cleaning, past parts-cleaning operations, or past disposal of waste solvent. The PCE contamination was first identified during the period 1993 to 1995 in four of the City's municipal drinking water supply wells in the vicinity of Griggs and Walnut Streets as a result of monitoring required by the Safe Drinking Water Act (SDWA). The municipal supply wells in the eastern well field obtain water from the Santa Fe Group aquifer, a ground water reservoir within the Mesilla Bolson.

The four affected municipal supply wells have become the subject of ongoing investigations initiated by the New Mexico Environment Department (NMED) and continued by the U.S. Environmental Protection Agency (EPA). As a result of these investigations, PCE has been detected in soil vapor in the unsaturated zone above the affected ground water, and in ground water at depths of up to 635 feet below ground surface (bgs). The Site, designated as the Griggs and Walnut Ground Water Plume (GWP), was added to EPA's National Priorities List of the Superfund Program on June 14, 2001 (66 Fed. Reg. 32235 (June 14, 2001)). The GWP Site includes the area of contamination and adjacent areas (if necessary) for the implementation of the response action. The current investigation (the subject of this report) provides data and interpretation that identify areas where PCE was most likely released to the environment as a result of past usage or disposal practices.

Problem Statement

Analysis of ground water samples collected by the NMED Drinking Water Bureau under the authority of the Safe Drinking Water Act (SDWA) found that the four previously identified municipal supply wells and one additional municipal supply well in the City of Las Cruces produce ground water containing PCE. The locations of all affected and unaffected supply wells in the vicinity are illustrated on [Figure 1](#). The four wells originally found to be contaminated with PCE are located within one-half mile of the East

Griggs Avenue and North Walnut Street intersection (City Well Nos. 18, 19, 21, and 27). One additional municipal supply well (City Well No. 24) was found to be contaminated with PCE in 2000. This well is located about one mile south of the other four Site wells. Three unaffected municipal supply wells (City Well Nos. 20, 26, and 61) are located between City Well No. 24 and City Well Nos. 18, 19, 21, and 27). This indicates that the contamination at Well No. 24 is unrelated to the contamination at the other four wells. PCE has also been detected at low concentrations in one private domestic well and one City irrigation well (**Figure 1**).

The Maximum Contaminant Level (MCL) for PCE in drinking water as defined by the SDWA is 5 parts per billion (ppb), or 5 micrograms per liter (5 ug/L) (**EPA, 2002**). The concentrations of PCE in the affected City municipal supply wells range from slightly below to slightly above the MCL. The City has kept concentrations of PCE in the drinking water system below the MCL by either removing contaminated wells from the distribution system or through a blending program approved by the NMED Drinking Water Bureau. The blending plan mixes affected water with unaffected water before it reaches the distribution system.

Under the authority of the EPA Superfund program, a Remedial Investigation (RI) is conducted to determine the nature and extent of the problem presented by the release. Simultaneously, and in an interactive fashion with the remedial investigation, a Feasibility Study (FS) is undertaken to develop and evaluate options for remedial action. The purpose of a Superfund remedial action is “to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment” (40 CFR 300.5). To the extent practicable, the EPA Remedial Project Manager assigned to a Superfund Site shall collect pertinent facts about the release, such as its source and cause, and about potentially responsible parties (40 CFR 300.135(c)). EPA expects to return usable ground waters to their beneficial uses wherever practicable, within a time frame that is reasonable given the particular circumstances of the Site.

Purpose and Scope of the Investigation

The current investigation was conducted at EPA's direction with the goal of identifying specific areas where PCE might have been released to the environment, and to collect data to be used to support the Remedial Investigation/Feasibility Study (RI/FS) for the Site.

The investigation included three primary components. One component was the collection of information related to current and historical land uses in the vicinity of the GWP Site that could have resulted in the release of PCE. The second component was a field investigation that involved the collection and analyses of soil vapor and ground water samples to evaluate where releases could have actually occurred. The third component was more limited in nature, but was intended to establish the basis for the future development of the Remedial Investigation Report and subsequent Feasibility Study. This component sought to characterize the nature and extent of the contamination.

The field investigation component took place during the period from April 29, 2002, through February 3, 2003. The locations sampled are illustrated in [Figure 2](#). The field investigation component included the collection of over 600 soil vapor samples, the installation of 7 soil vapor monitoring stations using direct push technology, the drilling and installation of 8 multi-level ground water wells, and the collection of over 200 ground water samples from new and existing wells. The initial soil vapor samples were collected at 5, 10, 15, and 20 feet below ground surface. During implementation, the sampling program (including the depths sampled and the grid spacing) was adjusted and expanded based on the preliminary findings from the data collected. The locations of the 8 multi-level wells were based on the ground water data available from the existing water table monitoring wells, and preliminary findings from the soil vapor investigation.

The multi-level wells were used to evaluate vertical variation of the PCE contamination in the aquifer. The City's municipal supply wells are open over a large vertical extent of the aquifer, and the contamination could be entering these wells over a relatively small portion of the aquifer. The multi-level wells were drilled to depths of about 670 feet below ground surface (bgs), corresponding to the depths of the municipal supply wells. Six to seven ports were installed in each well for sampling at

discrete depths in the aquifer. The individual sampling ports within each well were chosen based on the lithologic and stratigraphic information derived from geophysical logs of the boreholes, and ground water data collected during drilling.

Soil vapor analyses of the unsaturated zone above the contaminated aquifer were included in the investigation because PCE is a volatile organic compound and PCE in soil vapor is considered an effective indicator of a release of PCE to the unsaturated zone. PCE-contaminated vapor migrates laterally and vertically through the unsaturated zone by the physical process of diffusion away from a source area. Measuring PCE in soil vapor can determine if a chlorinated solvent was released at land surface because PCE can leave a persistent vapor residual in the unsaturated zone below the land area where it was released. This “vapor trail” in the unsaturated zone can persist over time, depending largely on how much waste was released. Based on the physical and chemical processes of vapor transport between the unsaturated zone and the ground water, the sources of PCE (as detected by the soil vapor analyses) should be found in the vicinity of the highest concentrations in ground water.

Ground water analyses, using the data collected from the multi-level wells as well as the water table wells, were included in the investigation to evaluate the relationship between the contamination in soil vapor and the contamination observed in the municipal supply wells. The extent of dissolved PCE in ground water, however, is primarily affected by the pumping of the municipal supply wells, and elevated concentrations observed in the ground water might not always indicate the precise location of the release at the surface.

GWP Site History

The following discussion summarizes the results of an extensive search of existing records of land use in the area where ground water is known or suspected of being affected by PCE.

Area Land Uses

The GWP Site is located in a developed area in the eastern side of Las Cruces, just west of I-25 and north of Lohman Avenue ([Figure 1](#)). A portion of this area, between North Solano Drive and Walnut Street,

along East Hadley Avenue, has been used for public parks (ball fields and recreation facilities) since the late 1970's. Residential neighborhoods are present west of North Solano Drive, east of North Walnut Street, north of East Hadley Avenue, and south of East Griggs Avenue. Most of the residential development east of North Walnut Street appears to have occurred in the 1980s (based on aerial photographs dated 1972 and 1980).

The property that is not used for residential or recreational purposes along Hadley and Griggs Avenue between North Solano and just east of Walnut is used for light industrial/commercial activity. The City operates a fleet maintenance facility on East Hadley Avenue just east of North Solano Drive on property that was once used as a municipal airport (the City facility is visible on a 1972 aerial photograph). Doña Ana County has operated a maintenance facility on East Griggs Avenue, just west of Walnut Street, since 1976 (Doña Ana County, 2001). Since 1971, the City has maintained a storage yard at the southeast corner of Griggs and Walnut (**Terracon, 2001**). The City also maintains the wellhead facilities associated with City Wells 18, 19, 21, and 27, and with the Upper Griggs Reservoir (an above-ground drinking water storage tank) along I-25. Empty lots and former construction activity (i.e., activity associated with sand and gravel operations or with construction companies) are located in the vicinity of the plume.

Also, one dry cleaning business is located south of East Griggs Avenue and Walnut Street (on Lohman Avenue), and several current and former dry cleaners were identified west of the plume (on and near North Main Street) (**Figure 3**).

Figure 3 identifies several properties that could have involved parts-cleaning operations and the use of chlorinated solvents including PCE. These properties were evaluated and either included as potential source areas to be sampled, or left for deferral to other programs. This was done by reviewing historical files, environmental assessments performed to transact a land sale, aerial photographs, and/or interviews with local residents and municipal personnel or property owners. A State of New Mexico National Guard Armory once was located at the northeast corner of North Solano Drive and East Hadley Avenue until 1990 (**City of Las Cruces, 1998**); the armory is first observed on an aerial photograph from 1972.

The City's Crawford Municipal Airport was located east of the armory from about the 1950s (**Doña Ana County, 2001**) until the late 1960s (**City of Las Cruces, 1993**). One of the runways for this airport was located along what eventually became East Hadley Avenue, and the airport buildings were located at what is now the City fleet yard.

Interviews conducted with current and former employees of the various businesses and residents of the area have revealed that, historically, disturbed areas and surface drainage features (arroyos) were reportedly used for dumping of waste material in the vicinity of the GWP Site.

Topography

The eastern area of the Site (between north of Hadley and south of Griggs, just west of I-25) includes two topographically elevated areas with an arroyo valley extending east-west in between. The arroyo once flowed east to west parallel to, and south of the present-day Hadley Avenue. The topographically elevated areas on either side of this feature were aligned approximately along Hadley and Griggs streets. Features that appear to be erosion control berms along the north side of the arroyo (along the south side of the runway) can be observed on aerial photographs from 1972). This arroyo no longer serves as a channel for surface water flow, having been intersected by the parks, streets, and storm-water retention basins. A separate, and larger arroyo (the Las Cruces Arroyo), is still present south of the GWP Site. The Las Cruces Arroyo trends east-to-west from about I-25 to near Lohman Avenue west of North Walnut Street, with some remnants of the original arroyo running just north and parallel to the Arroyo Plaza Shopping Center. The Las Cruces Flood Control Dam, located just east of I-25, keeps most of the storm water flow from traveling into and along the Las Cruces Arroyo. These topographic features are illustrated on **Figure 3**.

Geology

The subsurface geology in the GWP area was further defined during the drilling of eight multi-level wells. Ground water occurs at about 100-200 feet below ground surface (depending on surface topography). The observed stratigraphy is consistent with published literature descriptions of the Santa Fe Group and the Rio Grande Alluvium which overlies the Santa Fe Group in the western portion of the

Site. The base of the alluvium, a thick sand and gravel deposit, occurs at about 80 to 120 feet below ground surface in the western portion of the Site. This alluvium pinches out toward the east. The Santa Fe Group was observed to consist of mostly interbedded sand and gravel deposits underlain by a thick layer composed of fine sand with varying percentages of silt and clay. The deeper Santa Fe Group was observed to consist of thick, fine- to coarse-grained sand units with thick, interbedded finer-grained units. The base of the Santa Fe Group was not encountered during this investigation (drilling was conducted to 670 feet below ground surface, corresponding to the maximum depths of the municipal water supply wells).

The Extent of Observed Contamination

The extent of PCE detected in soil vapor is illustrated on [Figure 4](#). Although the concentrations of PCE in soil vapor are low and widespread, higher relative concentrations of PCE in shallow soil vapor are observed in the vicinity of the North Solano Drive/East Hadley Avenue intersection at sample location SVMP03), in the vicinity of the East Hadley Avenue/North Walnut Street intersection (at sample location PA077), and northwest/northeast of the East Griggs Avenue/North Walnut Street intersection (at sample locations SVMP01, DA028, R8005, and R2017). The locations of the greater concentrations of PCE in soil vapor are near the areas of elevated concentrations of the ground water below. These areas are identified on [Figure 4](#) as “PCE Release Areas.” See [Attachments A](#) and [B](#) for more details on which properties were evaluated for this investigation.

[Figures 5, 6, and 7](#) provide a cross-sectional view of the PCE in soil vapor in the subsurface above the water table. [Figure 8](#) provides a more detailed representation of the location of soil vapor samples and the range of maximum detections of PCE at each sampling location. The PCE release areas are identified based on relative concentrations of PCE in soil vapor.

PCE contamination in ground water in the vicinity of City Well Nos. 18, 19, 21, and 27, an area slightly larger than the area bounded by I-25 to the east and North Solano Drive to the west, in the vicinity of

East Hadley Avenue and East Griggs Avenue, covers approximately one-quarter to one-half square mile (**Figure 9**). Concentrations of PCE in both soil vapor and ground water decrease outside of this area, indicating that detections of PCE observed to the south (near City Well No. 24) and southwest (near multi-level ground-water monitoring well GWMW07) are unrelated to the GWP Site (**Figures 4 and 9**). Results of PCE analyses in soil vapor and ground water samples collected during the investigation and used in the evaluation of the extent of contamination are listed in the tables presented in **Attachment C**.

The extent of PCE detected in ground water at the water table is based on data from water table and deep, multi-level ground water monitoring wells (**Figure 9**). The potentiometric surface of the ground water is also shown on **Figure 9**. This surface, determined from the water levels measured in monitoring wells in December 2002, depicts a ground-water flow direction generally to the east (toward pumping wells).

The concentrations of PCE in ground water monitoring wells range from non-detectable to 53 ug/L at the water table. The concentrations of PCE in the affected municipal supply wells are lower (around 5 ug/L) because of the distance from the areas of greatest contamination in the aquifer, and from probable dilution over the long open interval of each well. PCE contamination extends vertically as much as 475 feet below the water table (shown in cross-sectional view in **Figure 10**). The PCE concentration contours shown in **Figure 10** indicate that the PCE-contaminated ground water is moving toward the pumping wells.

A closer, more graphical, representation of the distribution of PCE in ground water at the water table (in plan view) is illustrated in **Figure 11**. Cross-sectional views are provided in **Figures 12 and 13**. These views also support the conclusion that PCE-contaminated ground water is moving toward the pumping wells.

The migration of PCE contamination to soil and ground water associated with the GWP Site most likely came from low volume spills of PCE over time at locations, corresponding in general to the three areas of higher relative PCE concentrations in soil vapor shown in **Figures 4 and 6**. It is not likely, based on the concentrations observed, that a significant source of PCE liquid is still present in the shallow surface or

subsurface soil, although some residual may be present. As described above, the ground water that has been contaminated below these areas of low volume spills of PCE has been drawn toward the municipal supply wells by pumping.

It is also important to note that the concentration of PCE observed in soil vapor is likely to have been influenced by soil disturbance (soil disturbance can enhance volatilization) and other activities since the time the PCE was released to the environment. The concentrations of PCE commonly observed in soil vapor can be decreased by disturbance of the soil associated with development, precipitation or irrigation. Because of this, there may be a variation in concentrations of PCE in soil vapor immediately around the release area, with near surface concentrations detected at or below detection limits and greater concentrations at depth. In addition, volatilization can be limited by construction of surface features, such as parking lots, roads, or buildings, and higher concentrations may appear under paved areas adjacent to unpaved release areas where PCE concentrations have dispersed.

Areas of PCE Detection Beyond the Known Plume Boundaries

The extent of soil vapor and ground water contamination affecting City wells 18, 19, 21, and 27 is relatively well understood, although additional information may be necessary to evaluate if a relationship exists between the affected municipal supply wells and PCE detected to the south and southwest of the ground water contamination plume boundaries. The detections observed that appear to be outside the areas of influence on the affected supply wells might need further evaluation to protect the long term beneficial uses of the aquifer.

It is unlikely that the concentrations of PCE observed in ground water have migrated laterally from distant locations west of the known plume boundary, such as from the current and former dry cleaners in the vicinity of North Main Street ([Figure 3](#)). These areas are not considered sources of PCE to the GWP Site, based on knowledge of the localized hydrogeology. The effects of dispersion, diffusion, and dilution of PCE that would occur along a flow path in the direction of the GWP plume (if, in fact, such flow paths exist) reduce this likelihood of influence.

The dry cleaner located to the south and the construction companies to the south and east were also evaluated as potential source areas at GWP. It was determined that PCE has not migrated from these locations to the GWP Site, based on ground water flow that appears to move southeasterly through these areas and the soil vapor data collected.

Identification of PCE Release Areas

Based on the observed nature and extent of contamination, conclusions can be drawn about the areas where PCE was likely released to the soil. This information corresponds to current and historical land uses and assists in understanding the likely origin of the contamination. The land uses coinciding with the locations of higher relative concentrations of PCE in soil vapor are the historical operations at the former National Guard Armory, historical operations at the former Crawford Municipal Airport, historical and/or current operations at the City fleet yard, historical, and/or current operations at the Doña Ana County maintenance facility, and the suspected uncontrolled dumping of waste materials at the former arroyo area between East Hadley and East Griggs Avenue. The properties that demonstrate the higher relative concentrations in soil vapor are currently owned by the City of Las Cruces and Doña Ana County (**Figure 8**).

Based on samples collected from sampling locations in the vicinity of and at sampling location SVMP03, on property currently owned by the City and formerly occupied by a State of New Mexico National Guard Armory at the northeast corner of North Solano Drive and East Hadley Avenue (**Figure 8**), it is more likely than not that PCE was released to the soil and to the environment on the City's property at some time prior to the current development in the vicinity, and possibly as part of episodic releases of waste solvent during activities at the former armory property.

Based on samples collected in the vicinity of and at sampling location PA077, near the current intersection of Hadley Avenue and Walnut Street (**Figure 8**), on property owned by the City and formerly occupied by the Crawford Municipal Airport, it is more likely than not that PCE was released to the soil at some time as part of a one-time, or episodic release of waste solvent in areas within or adjacent to the arroyo that previously extended east to west through the southern area of this property.

Based on samples taken in the vicinity of and at sampling locations SVMP01, DA025, DA027, DA028, R8004, and R8005, on and adjacent to the Doña Ana County Maintenance facility ([Figure 8](#)), it is more likely than not that PCE was released to the soil at some time on property owned by Doña Ana County at the current location of the Doña Ana County maintenance facility.

It is also possible that PCE was released as part of a one-time or episodic release of solvent waste in areas adjacent to or within the arroyo that previously extended east to west just north of Doña Ana County maintenance facility.

See [Attachments A](#) and [B](#) for more detailed discussions of how properties were evaluated, and why some were eliminated as source areas at the GWP Site.

[This page intentionally left blank.]

Selected References

Aerial Photograph, 1972. Site Vicinity

Aerial Photograph, 1980. Site Vicinity

Agency for Toxic Substances and Disease Registry (ATSDR), 1997. *Toxicological Profile for Tetrachloroethylene*. Update. ATSDR, Atlanta, Georgia, September 1997.

City of Las Cruces (CLC), 1998. Letter from William L. Mc Kinney/Director of Water Resources, City of Las Cruces, to Christopher Holmes/Water Resources Specialist, New Mexico Environment Department Superfund Oversight Section, regarding *Comments on Preliminary Assessment report for Las Cruces PCE by Christopher Holmes*, October 30, 1997. January 9, 1998.

Dona Ana County, 2001. Letter from Dona Ana County to Lydia Behn/EPA Enforcement Division regarding Dona Ana County's response to EPA's CERCLA 104 (e) request. October 17, 2001.

Terracon, 2001. *Phase I Environmental Site Assessment, 3.8 Acre Tract of Land, 403 Walnut Avenue, Las Cruces, Dona Ana County, New Mexico*. July 27, 2001.

US Environmental Protection Agency (EPA), 2002. *List of Drinking Water Contaminants & MCLs*. EPA 816-F-02-013, July 2002.

[This page intentionally left blank.]

insert Figures 1 through 13

[This page intentionally left blank.]

Attachment A
Principal Criteria and Process For Determining If Areas In The Vicinity Of The
Griggs And Walnut Superfund Site Are Sources Of PCE Contamination In Ground Water

[This page intentionally left blank.]

Principal Criteria and Process For Determining If Areas In The Vicinity Of The Griggs And Walnut Superfund Site Are Sources Of PCE Contamination In Ground Water

Measuring PCE in soil vapor is an effective method for determining whether this chlorinated solvent was released at land surface because PCE can leave a long lasting vapor residual in the unsaturated zone below the land area where it was released. This “vapor trail” in the unsaturated zone can last several years to decades, depending largely on how much PCE was released. The measured amounts of PCE in the unsaturated zone depend on a number of factors including when the sample was collected after the time of release to the environment, how far from the release the samples were collected, how much surface disturbance has occurred in the affected area of release, and if a less permeable layer such as asphalt overlays part or all of the release area. However, despite surface disturbances, evaporation, diffusion of the vapor away from the source, and other factors that lower concentrations of PCE vapor, the unsaturated zone will generally contain sufficient PCE vapor to demonstrate a release to overlying soils has occurred.

Based on the areal and vertical distribution of PCE measured in soil vapor in the vicinity of the Griggs and Walnut Plume Superfund Site, it is most probable that PCE released at the land surface has migrated downward to the water table. The PCE has caused the contamination of the ground water and resulted in its detection in the municipal supply wells. The combined effects of natural migration and municipal well pumping has created the scenario we have in the City of Las Cruces.

In addition to the soil vapor data collected during the field investigation, the data collected from the (City of Las Cruces (CLC) municipal supply wells, water table monitoring wells, and the multi-level monitoring wells, revealed the extent of PCE concentrations in ground water and furthered the evaluation of the affected ground water area. Areas of higher relative concentrations of PCE in shallow soil vapor indicate a release to soil. Over the 100-200 feet of unsaturated zone to the ground water table, the path of contamination between the shallow soil and the ground water may vary depending on local variations in stratigraphy. Once the contamination reaches the ground water, the contamination will disperse, and concentration contours will be affected by the natural gradient and gradients imposed by pumping of municipal supply wells. The greatest concentrations of PCE in ground water therefore might not always spatially coincide with the areas of greatest concentration in soil vapor, although they will occur in the same general vicinity.

In this source area investigation, a significant amount of ground water and soil vapor data were collected in order to address the large ground water area affected by PCE. Although every effort was made to adjust and to optimize data collection during the period of the field work for all areas of concern, it was not possible to exhaustively sample ground water and soil vapor for the purpose of investigating all potential areas as source areas not associated with the GWP site. Thus, several areas within the affected zones were not sampled, and were eliminated for the present assignment. These decisions were based on secondary evidence such as distance from the ground water plume, spatially intervening non-detections of PCE in ground water or soil vapor,

ground water flow direction beneath the property determined to be moving away from the plume, lack of historical use of PCE at a property, data or historical evidence supporting no further action is needed, or any combination of these criteria. Limitations for complete evaluation of some areas designated as not source areas are recognized, and, for areas under specific scrutiny, additional data collection could be considered at a later date if deemed necessary.

Process for Determining Areas of Release

The following properties are considered to be areas where PCE was released at land surface to soils, where PCE entered the unsaturated zone, and where PCE migrated into ground water, causing the present concentrations of PCE measured at CLC wells and monitoring wells.

- ' Site One, Dona Ana County Maintenance Yard—This location was sampled for PCE in both soil vapor and ground water. PCE was found at the county yard in shallow soil vapor and ground water at higher relative concentrations than surrounding areas. Refer to elevated soil vapor detections at locations SVMP1, DA027, DA028, R8004, and R8005, and elevated ground water detections in wells GWMW01, MW-SF1, MW-SF2, MW-SF3, MW-1, MW-2, and MW-3. Also, PCE use has been documented at this facility. Based on this information, it is concluded that PCE was released to the shallow soil in this area and migrated to ground water.
- ' Site Two, Former Crawford Municipal Airport Property, near the intersection of Hadley Avenue and North Walnut Street. —This location was sampled for PCE in both soil vapor and ground water. PCE was found in this area of the former airport property in shallow soil vapor at higher relative concentrations than surrounding areas. Refer to elevated soil vapor detections at locations PA023, PA048, PA049, PA050, PA067, PA068, PA073, and PA077. Nearby ground water monitoring wells also demonstrated higher relative concentrations in ground water. Refer to elevated ground water detections in wells GWMW09, and MW-SF10. Historical dumping along the former arroyo in this area is suspected. Based on this information, it is concluded that PCE was released to the shallow soil in this area and migrated to nearby ground water.
- ' Site Three, Former National Guard Armory on North Solano Drive—This location was sampled for PCE in both soil vapor and ground water. PCE was found in shallow soil vapor at the former armory property in shallow soil vapor at higher relative concentrations than surrounding areas. Refer to elevated soil vapor detections at locations NG001 through NG033 (highest detections at NG016 and SVMP03). Nearby ground water monitoring wells also demonstrated higher relative concentrations in ground water. Refer to elevated ground water detections in wells MW-SF7 and MW-SF8. Based on this information, it is concluded that PCE was released to the shallow soil in this area and migrated to nearby ground water.

Listing onto the NPL requires that specific criteria be met in order for Superfund to become available for remediating the contamination. The Griggs and Walnut Superfund Site qualified for Listing on the National Priorities List (NPL), because of the PCE affected water supply for the City of Las Cruces. Hence, it was necessary for the site investigation to remain focused on areas within the boundaries of the GWP plume, and less on areas located farther from affected wells (for example, locations of former dry cleaners along Main Street). Areas that were discovered to be affected with PCE but not related to the GWP are not considered appropriate for this source investigation but should be investigated. These areas are referred to a State or local government for action.

EPA began the source investigation process by assessing the ground water and soil vapor data collected to date by the New Mexico Environment Department. Specifically, the data were part of the package submitted to EPA for listing and demonstrating qualification to the NPL. Based on these data, EPA designed and implemented a detailed sampling program to address data needs, and gathered additional information about the properties within the area of the plume. This included sending out information requests to the City of Las Cruces and Doña Ana County, for information regarding the use of PCE in the vicinity. The history of land use in the vicinity of the plume was also provided by various parties interested in assisting in the investigation process, and by reviewing historical aerial photographs. This history, land-use patterns, and practices in the community were evaluated and combined with information about the general hydrology, including information on stratigraphy and the vertical distribution of the plume collected in the deep multi-level monitoring wells, and pumping rates at the City supply wells.

Areas that were immediately considered as requiring more data collection were those areas that already had measured detections of PCE in ground water within the vicinity of wells 18, 19, 21, 27. A grid plan for sampling soil vapor was established for large areas and, based on the field data, the sampling grid was expanded and refined to identify the areas of highest relative detections of PCE. Next, areas identified by the community that could have been areas of release were evaluated and sampled. The third consideration for sampling was the data obtained during field operations that indicated further evaluation in an area was appropriate, or, if no further evaluation was necessary for identifying source areas. It is important to emphasize that areas that had low concentrations of PCE in soil vapor, and did not appear to be source areas (for example, at the City fleet maintenance yard on Hadley, or the City's storage yard on North Walnut) were not further evaluated once this determination was made.

DESIGNATION OF AREAS NOT CONSIDERED AS SOURCES OF THE GWP PLUME

Dry Cleaners West of Plume – Although the US Geological Survey detected measurable amounts of PCE in soil vapor at several locations (i.e., on Main Street, Picacho Avenue) west of the ground water plume, intervening soil vapor and ground water sample locations, combined with the distance of these dry cleaners from the GWP-affected supply wells and ground water flow gradients, indicate that these areas were not sources of the

PCE in ground water supplying the water supply wells in the vicinity of the GWP site (wells 18, 19, 21, and 27). Any determination regarding the extent of contamination associated with the dry cleaners west of the plume will be dependent on separate investigations.

Comet Dry Cleaners South of GWP – The US Geological Survey noted a detection of PCE in shallow soil vapor in one location, at 10 feet below ground surface. Shallow soil vapor data collected between this property and the areas of elevated PCE in soil vapor to the north (at the DACTD yard and former Crawford Airport property), however, were nondetect for PCE. Also, in terms of ground water flow direction, the Comet property is located adjacent to the plume rather than upgradient, suggesting that any contamination resulting from Comet to ground water would migrate away from the GWP site rather than toward it. This conclusion could be confirmed by collection of additional soil vapor and ground water data in the area under a separate investigation.

CLC Walnut Street Storage Yard – This property is on the southern edge of the soil vapor and water table portion of the GWP plume, as currently defined by soil vapor data and water table monitoring well MW-SF9, an uncontaminated well located in the southeast corner of this property (i.e. there is no PCE contamination at water table). PCE is detected in some soil vapor at this property, but at relatively lower concentrations (less than 2.94 ug/L) and only along the northern edge of the property. These levels probably originated from lateral spread of contaminated soil vapor at one of the other spill areas and was not considered a source area for ground water contamination.

Residential Properties West of Triviz Road near CLC 19 and 21 (Sunrise Terrace and Sunrise Knolls Subdivisions) – Soil vapor samples were collected at 23 locations in these neighborhoods. PCE was detected in shallow soil vapor in the western portion of this area and in ground water. However, PCE concentrations in soil vapor were lower (ranging up to a maximum of only 1.8 µg/L at S4001) than in other areas to the west, and the ground water detections were lower at the water table than at depth. Releases of PCE wastes and contamination of ground water likely did not occur here. Various parties reported that informal dumping may have occurred on this vicinity, but the data does not support this possibility.

Residential Properties East and West of North Solano north of Griggs Avenue (Grammercy Park, Cox First, Mountain View Heights, and Dean Subdivisions) – Soil vapor samples were collected at 19 locations in these neighborhoods. PCE was detected in soil vapor at some locations within these properties, mostly in the northern areas toward the former National Guard Armory. However, PCE concentrations in soil vapor were lower (ranging up to only 2.84 µg/L at R5003) than in other areas to the north and east. Releases of PCE wastes and contamination of ground water likely did not occur here.

- ' Former Smith and Aguirre Construction (now Home-Depot) - Soil vapor samples were collected at 40, 60, 75, and 92 feet below ground surface through a soil vapor monitoring well installed at this location (SVMP05). PCE was detected in only one sample, estimated at 0.06 µg/L (too low to be measured precisely). The soil vapor data collected here indicated that a release of PCE to soil most likely did not occur on this property.
- ' Former Burn Construction Company (now Wal-Mart) – Soil vapor samples were collected at 12, 35, 55, 75, 95, and 115 feet below ground surface through a soil vapor monitoring well installed at this location (SVMP02). PCE was not detected in any of these samples. The soil vapor data collected here indicated that a release of PCE to soil most likely did not occur on this property.
- ' Former National Guard Facilities (near Lynn Junior High School) -While detections at a nearby municipal supply well and irrigation well have been measured by the New Mexico Drinking Water Bureau as part of their routine municipal supply water well sampling, EPA did not install any monitoring wells in this vicinity nor collect soil vapor samples because the location was determined to be too far south, southeasterly to be associated with GWP plume. This was also determined by the no detections of PCE measured in the three intervening municipal supply wells and the ground water flow direction moving away from the plume.

[This page intentionally left blank.]

Attachment B
Properties and Dry Cleaners Evaluated for the Source Investigation

[This page intentionally left blank.]

insert Tables B-1 and B-2

[This page intentionally left blank.]

insert Figure B-1

[This page intentionally left blank.]

Attachment C
PCE in Soil Vapor and Ground Water Samples

[This page intentionally left blank.]

Table C-1**PCE Soil Vapor Analytical Results**

(Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)

*Griggs and Walnut Groundwater Plume Site**Las Cruces, New Mexico*

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
CL001	SIB0025	8/20/02 13:26	10	10	8021B	PCE	1.5	=	UG/L
CL001	SIB0026	8/20/02 13:47	21	21	8021B	PCE	2.94	=	UG/L
CL002	SIB0028	8/20/02 14:53	10	10	8021B	PCE	0.1	<	UG/L
CL002	SIB0029	8/20/02 15:07	24	24	8021B	PCE	0.1	<	UG/L
CL003	SIB0030	8/20/02 16:10	10	10	8021B	PCE	0.63	B	UG/L
CL003	SIB0031	8/20/02 16:26	24	24	8021B	PCE	1.18	=	UG/L
CL004	SIB0032	8/20/02 16:53	10	10	8021B	PCE	0.97	B	UG/L
CL004	SIB0033	8/20/02 17:07	24	24	8021B	PCE	1.89	=	UG/L
CL005	SIB0036	8/21/02 7:37	10	10	8021B	PCE	0.05	<	UG/L
CL005	SIB0037	8/21/02 7:56	24	24	8021B	PCE	0.05	<	UG/L
CL006	SIB0071	8/22/02 14:21	10	10	8021B	PCE	0.21	B	UG/L
CL006	SIB0072	8/22/02 14:36	20	20	8021B	PCE	0.35	B	UG/L
CL007	SIB0133	8/26/02 10:50	10	10	8021B	PCE	0.05	<	UG/L
CL007	SIB0134	8/26/02 11:05	24	24	8021B	PCE	0.11	B	UG/L
CL008	SIB0129	8/26/02 9:47	10	10	8021B	PCE	0.61	B	UG/L
CL008	SIB0130	8/26/02 10:02	17	17	8021B	PCE	1.05	=	UG/L
CL009	SIB0135	8/26/02 12:00	10	10	8021B	PCE	0.05	<	UG/L
CL009	SIB0137	8/26/02 12:47	18	18	8021B	PCE	0.05	<	UG/L
CL010	SIB0038	8/21/02 8:43	10	10	8021B	PCE	0.05	<	UG/L
CL011	SIB0042	8/21/02 11:20	10	10	8021B	PCE	0.05	<	UG/L
CL011	SIB0043	8/21/02 11:34	20	20	8021B	PCE	0.05	<	UG/L
CL012	SIB0138	8/26/02 13:24	10	10	8021B	PCE	0.05	<	UG/L
CL012	SIB0139	8/26/02 13:38	18	18	8021B	PCE	0.05	<	UG/L
CL013	SIB0040	8/21/02 10:18	10	10	8021B	PCE	0.05	<	UG/L
CL015	SIB0140	8/26/02 14:51	10	10	8021B	PCE	0.05	<	UG/L
CL016	SIB0039	8/21/02 9:42	10	10	8021B	PCE	0.05	<	UG/L
CL017	SIB0142	8/26/02 15:41	8	8	8021B	PCE	0.05	<	UG/L
CL018	SIB0044	8/21/02 12:07	10	10	8021B	PCE	0.05	<	UG/L
CL018	SIB0045	8/21/02 12:21	22	22	8021B	PCE	0.05	<	UG/L
DA001	SIA0002	4/29/02 9:15	5	5	8021B	PCE	0.18	B	UG/L
DA001	SIA0003	4/29/02 9:29	10	10	8021B	PCE	0.25	B	UG/L
DA001	SIA0004	4/29/02 9:54	15	15	8021B	PCE	0.36	B	UG/L
DA001	SIA0005	4/29/02 10:05	20	20	8021B	PCE	0.43	B	UG/L
DA002	SIA0006	4/29/02 10:38	5	5	8021B	PCE	0.16	B	UG/L
DA002	SIA0007	4/29/02 10:54	10	10	8021B	PCE	0.29	B	UG/L
DA002	SIA0008	4/29/02 11:16	15	15	8021B	PCE	0.3	B	UG/L
DA002	SIA0009	4/29/02 11:27	20	20	8021B	PCE	0.37	B	UG/L
DA003	SIA0010	4/29/02 11:48	5	5	8021B	PCE	0.05	<	UG/L
DA003	SIA0011	4/29/02 12:07	10	10	8021B	PCE	0.14	B	UG/L
DA003	SIA0012	4/29/02 12:54	15	15	8021B	PCE	0.38	B	UG/L
DA003	SIA0013	4/29/02 13:08	20	20	8021B	PCE	0.29	B	UG/L
DA004	SIA0014	4/29/02 13:40	5	5	8021B	PCE	0.23	B	UG/L
DA004	SIA0015	4/29/02 13:50	10	10	8021B	PCE	0.29	B	UG/L
DA004	SIA0016	4/29/02 14:11	15	15	8021B	PCE	0.41	B	UG/L
DA004	SIA0017	4/29/02 14:30	20	20	8021B	PCE	0.47	B	UG/L
DA005	SIA0018	4/29/02 14:54	5	5	8021B	PCE	0.29	B	UG/L
DA005	SIA0019	4/29/02 15:08	10	10	8021B	PCE	0.45	B	UG/L
DA005	SIA0020	4/29/02 15:25	15	15	8021B	PCE	0.56	B	UG/L
DA005	SIA0021	4/29/02 15:45	20	20	8021B	PCE	0.67	B	UG/L

Table C-1
PCE Soil Vapor Analytical Results
 (Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)
 Griggs and Walnut Groundwater Plume Site
 Las Cruces, New Mexico

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
DA006	SIA0035	4/30/02 11:50	5	5	8021B	PCE	0.05	<	UG/L
DA006	SIA0036	4/30/02 12:02	10	10	8021B	PCE	0.4	B	UG/L
DA006	SIA0037	4/30/02 12:19	15	15	8021B	PCE	0.26	B	UG/L
DA006	SIA0038	4/30/02 12:38	20	20	8021B	PCE	0.11	B	UG/L
DA007	SIA0025	4/30/02 7:52	5	5	8021B	PCE	0.4	B	UG/L
DA007	SIA0026	4/30/02 8:07	10	10	8021B	PCE	0.62	B	UG/L
DA007	SIA0027	4/30/02 8:24	15	15	8021B	PCE	0.62	B	UG/L
DA007	SIA0028	4/30/02 8:42	20	20	8021B	PCE	0.73	B	UG/L
DA007	SIA0029	4/30/02 9:03	25	25	8021B	PCE	0.84	B	UG/L
DA007	SIA0030	4/30/02 9:24	30	30	8021B	PCE	1.43	=	UG/L
DA007	SIA0031	4/30/02 9:49	35	35	8021B	PCE	0.19	B	UG/L
DA007	SIA0032	4/30/02 10:03	40	40	8021B	PCE	0.13	B	UG/L
DA007	SIA0033	4/30/02 10:24	43	43	8021B	PCE	0.05	<	UG/L
DA008	SIA0202	5/13/02 8:08	5	5	8021B	PCE	0.11	B	UG/L
DA008	SIA0203	5/13/02 8:22	10	10	8021B	PCE	0.37	B	UG/L
DA008	SIA0204	5/13/02 8:39	15	15	8021B	PCE	0.2	B	UG/L
DA008	SIA0206	5/13/02 9:20	20	20	8021B	PCE	0.9	B	UG/L
DA009	SIA0039	4/30/02 13:05	5	5	8021B	PCE	0.41	B	UG/L
DA009	SIA0040	4/30/02 13:17	10	10	8021B	PCE	0.63	B	UG/L
DA009	SIA0041	4/30/02 13:33	15	15	8021B	PCE	0.73	B	UG/L
DA009	SIA0042	4/30/02 13:50	20	20	8021B	PCE	0.88	B	UG/L
DA011	SIA0065	5/1/02 12:20	5	5	8021B	PCE	1.13	=	UG/L
DA011	SIA0066	5/1/02 12:39	10	10	8021B	PCE	1.21	=	UG/L
DA011	SIA0067	5/1/02 12:52	15	15	8021B	PCE	1.19	=	UG/L
DA011	SIA0068	5/1/02 13:07	20	20	8021B	PCE	1.29	=	UG/L
DA013	SIA0043	4/30/02 14:55	5	5	8021B	PCE	1.11	=	UG/L
DA013	SIA0044	4/30/02 15:07	10	10	8021B	PCE	1.45	=	UG/L
DA013	SIA0045	4/30/02 15:24	15	15	8021B	PCE	1.96	=	UG/L
DA013	SIA0046	4/30/02 15:42	20	20	8021B	PCE	2.07	=	UG/L
DA014	SIA0069	5/1/02 13:38	5	5	8021B	PCE	0.6	B	UG/L
DA014	SIA0070	5/1/02 13:42	10	10	8021B	PCE	0.71	B	UG/L
DA014	SIA0071	5/1/02 14:04	15	15	8021B	PCE	0.8	B	UG/L
DA014	SIA0072	5/1/02 14:20	20	20	8021B	PCE	0.91	B	UG/L
DA015	SIA0061	5/1/02 10:38	5	5	8021B	PCE	1.15	=	UG/L
DA015	SIA0062	5/1/02 10:48	10	10	8021B	PCE	0.96	B	UG/L
DA015	SIA0063	5/1/02 11:33	15	15	8021B	PCE	1.51	=	UG/L
DA015	SIA0064	5/1/02 11:48	20	20	8021B	PCE	1.55	=	UG/L
DA017	SIA0047	4/30/02 16:05	5	5	8021B	PCE	1.21	=	UG/L
DA017	SIA0048	4/30/02 16:16	10	10	8021B	PCE	1.87	=	UG/L
DA017	SIA0049	4/30/02 16:40	15	15	8021B	PCE	2.28	=	UG/L
DA017	SIA0050	4/30/02 16:58	20	20	8021B	PCE	2.73	=	UG/L
DA018	SIA0078	5/2/02 8:01	5	5	8021B	PCE	0.55	B	UG/L
DA018	SIA0079	5/2/02 8:16	10	10	8021B	PCE	0.86	B	UG/L
DA018	SIA0080	5/2/02 8:34	15	15	8021B	PCE	1.22	=	UG/L
DA018	SIA0081	5/2/02 8:54	20	20	8021B	PCE	1.26	=	UG/L
DA018	SIA0082	5/2/02 9:14	25	25	8021B	PCE	1.67	=	UG/L
DA018	SIA0083	5/2/02 9:30	30	30	8021B	PCE	1.84	=	UG/L
DA018	SIA0084	5/2/02 9:50	35	35	8021B	PCE	1.12	=	UG/L
DA018	SIA0085	5/2/02 10:07	40	40	8021B	PCE	0.24	B	UG/L
DA018	SIA0086	5/2/02 10:29	45	45	8021B	PCE	0.13	B	UG/L

Table C-1
PCE Soil Vapor Analytical Results
 (Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)
 Griggs and Walnut Groundwater Plume Site
 Las Cruces, New Mexico

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
DA018	SIA0087	5/2/02 10:47	50	50	8021B	PCE	0.09	B	UG/L
DA020	SIA0057	5/1/02 9:18	5	5	8021B	PCE	0.88	B	UG/L
DA020	SIA0058	5/1/02 9:34	10	10	8021B	PCE	1.31	=	UG/L
DA020	SIA0059	5/1/02 9:54	15	15	8021B	PCE	1.83	=	UG/L
DA020	SIA0060	5/1/02 10:10	20	20	8021B	PCE	2.82	=	UG/L
DA021	SIA0073	5/1/02 15:06	5	5	8021B	PCE	0.75	B	UG/L
DA021	SIA0074	5/1/02 15:22	10	10	8021B	PCE	1.1	=	UG/L
DA021	SIA0075	5/1/02 15:41	15	15	8021B	PCE	0.09	B	UG/L
DA021	SIA0076	5/1/02 15:59	20	20	8021B	PCE	0.15	B	UG/L
DA023	SIA0052	5/1/02 7:42	5	5	8021B	PCE	1.68	=	UG/L
DA023	SIA0053	5/1/02 8:07	10	10	8021B	PCE	1.78	=	UG/L
DA023	SIA0054	5/1/02 8:18	15	15	8021B	PCE	1.2	=	UG/L
DA023	SIA0055	5/1/02 8:38	20	20	8021B	PCE	3.35	=	UG/L
DA024	SIA0178	5/6/02 8:12	5	5	8021B	PCE	0.43	B	UG/L
DA024	SIA0179	5/6/02 8:29	10	10	8021B	PCE	0.59	B	UG/L
DA024	SIA0181	5/6/02 9:13	15	15	8021B	PCE	0.93	B	UG/L
DA024	SIA0182	5/6/02 9:24	20	20	8021B	PCE	0.44	B	UG/L
DA025	SIA0183	5/6/02 9:48	5	5	8021B	PCE	0.71	B	UG/L
DA025	SIA0184	5/6/02 10:05	10	10	8021B	PCE	1.3	=	UG/L
DA025	SIA0185	5/6/02 10:20	15	15	8021B	PCE	2.07	=	UG/L
DA025	SIA0186	5/6/02 10:40	20	20	8021B	PCE	2.71	=	UG/L
DA026	SIA0189	5/6/02 12:04	5	5	8021B	PCE	2.01	=	UG/L
DA026	SIA0190	5/6/02 12:24	10	10	8021B	PCE	2.21	=	UG/L
DA026	SIA0191	5/6/02 12:42	15	15	8021B	PCE	2.94	=	UG/L
DA026	SIA0192	5/6/02 12:58	20	20	8021B	PCE	3.22	=	UG/L
DA027	SIA0193	5/6/02 13:38	5	5	8021B	PCE	3.03	=	UG/L
DA027	SIA0194	5/6/02 13:50	10	10	8021B	PCE	3.98	=	UG/L
DA027	SIA0195	5/6/02 14:07	15	15	8021B	PCE	5.13	=	UG/L
DA027	SIA0196	5/6/02 14:51	20	20	8021B	PCE	5.96	=	UG/L
DA028	SIA0197	5/6/02 15:10	5	5	8021B	PCE	2.52	=	UG/L
DA028	SIA0198	5/6/02 15:30	10	10	8021B	PCE	3.45	=	UG/L
DA028	SIA0199	5/6/02 15:50	15	15	8021B	PCE	4.34	=	UG/L
DA028	SIA0200	5/6/02 16:05	20	20	8021B	PCE	5.47	=	UG/L
DA029	SIA0369	5/28/02 9:13	10	10	8021B	PCE	0.05	<	UG/L
DA029	SIA0370	5/28/02 9:27	24	24	8021B	PCE	0.05	<	UG/L
DA030	SIA0367	5/28/02 8:39	10	10	8021B	PCE	0.05	<	UG/L
DA030	SIA0368	5/28/02 8:49	24	24	8021B	PCE	0.05	<	UG/L
DA032	SIA0371	5/28/02 10:16	10	10	8021B	PCE	0.05	<	UG/L
DA032	SIA0372	5/28/02 10:29	24	24	8021B	PCE	0.05	<	UG/L
DA034	SIA0384	5/28/02 15:28	10	10	8021B	PCE	0.77	B	UG/L
DA034	SIA0385	5/28/02 15:40	24	24	8021B	PCE	1.68	=	UG/L
DA036	SIA0382	5/28/02 14:44	10	10	8021B	PCE	0.05	<	UG/L
DA036	SIA0383	5/28/02 14:55	24	24	8021B	PCE	0.05	<	UG/L
DA038	SIA0380	5/28/02 13:29	10	10	8021B	PCE	0.05	<	UG/L
DA038	SIA0381	5/28/02 13:43	24	24	8021B	PCE	0.05	<	UG/L
DA039	SIA0377	5/28/02 12:20	10	10	8021B	PCE	0.05	<	UG/L
DA039	SIA0378	5/28/02 12:30	24	24	8021B	PCE	0.05	<	UG/L
DA040	SIA0375	5/28/02 11:17	10	10	8021B	PCE	0.05	<	UG/L
DA040	SIA0376	5/28/02 11:29	24	24	8021B	PCE	0.05	<	UG/L

Table C-1
PCE Soil Vapor Analytical Results
 (Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)
 Griggs and Walnut Groundwater Plume Site
 Las Cruces, New Mexico

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
FM002	SIA0319	5/17/02 11:16	5	5	8021B	PCE	0.74	B	UG/L
FM002	SIA0320	5/17/02 11:26	10	10	8021B	PCE	0.9	B	UG/L
FM002	SIA0321	5/17/02 12:10	15	15	8021B	PCE	1.1	=	UG/L
FM002	SIA0322	5/17/02 12:26	20	20	8021B	PCE	1.16	=	UG/L
FM004	SIA0262	5/15/02 9:23	5	5	8021B	PCE	0.15	B	UG/L
FM004	SIA0263	5/15/02 9:34	10	10	8021B	PCE	0.14	B	UG/L
FM004	SIA0264	5/15/02 9:52	15	15	8021B	PCE	0.25	B	UG/L
FM004	SIA0267	5/15/02 10:36	20	20	8021B	PCE	0.31	B	UG/L
FM006	SIA0323	5/17/02 12:55	5	5	8021B	PCE	0.53	B	UG/L
FM006	SIA0324	5/17/02 13:11	10	10	8021B	PCE	0.72	B	UG/L
FM006	SIA0325	5/17/02 13:28	15	15	8021B	PCE	1.02	=	UG/L
FM006	SIA0326	5/17/02 13:48	20	20	8021B	PCE	0.97	B	UG/L
FM008	SIA0297	5/16/02 12:27	5	5	8021B	PCE	0.74	B	UG/L
FM008	SIA0298	5/16/02 12:38	10	10	8021B	PCE	1.12	=	UG/L
FM008	SIA0299	5/16/02 12:58	15	15	8021B	PCE	1.26	=	UG/L
FM008	SIA0302	5/16/02 13:36	20	20	8021B	PCE	1.41	=	UG/L
FM009	SIA0257	5/15/02 7:37	5	5	8021B	PCE	0.32	B	UG/L
FM009	SIA0258	5/15/02 7:57	10	10	8021B	PCE	0.05	<	UG/L
FM009	SIA0260	5/15/02 8:43	15	15	8021B	PCE	0.06	B	UG/L
FM009	SIA0261	5/15/02 8:54	20	20	8021B	PCE	0.05	<	UG/L
FM011	SIA0268	5/15/02 11:03	5	5	8021B	PCE	0.05	<	UG/L
FM011	SIA0269	5/15/02 11:15	10	10	8021B	PCE	0.07	B	UG/L
FM011	SIA0271	5/15/02 12:32	15	15	8021B	PCE	0.17	B	UG/L
FM011	SIA0272	5/15/02 12:43	20	20	8021B	PCE	0.17	B	UG/L
FM013	SIA0236	5/14/02 11:20	5	5	8021B	PCE	0.86	B	UG/L
FM013	SIA0237	5/14/02 11:32	10	10	8021B	PCE	1.31	=	UG/L
FM013	SIA0239	5/14/02 12:14	15	15	8021B	PCE	1.8	=	UG/L
FM013	SIA0240	5/14/02 12:29	20	20	8021B	PCE	1.9	=	UG/L
FM014	SIA0231	5/14/02 9:44	5	5	8021B	PCE	0.43	B	UG/L
FM014	SIA0232	5/14/02 9:54	10	10	8021B	PCE	1.29	=	UG/L
FM014	SIA0234	5/14/02 10:42	15	15	8021B	PCE	1.41	=	UG/L
FM014	SIA0235	5/14/02 10:53	20	20	8021B	PCE	1.41	=	UG/L
FM015	SIA0207	5/13/02 10:29	5	5	8021B	PCE	0.38	B	UG/L
FM015	SIA0208	5/13/02 10:44	10	10	8021B	PCE	0.37	B	UG/L
FM015	SIA0209	5/13/02 11:00	15	15	8021B	PCE	0.43	B	UG/L
FM015	SIA0210	5/13/02 11:17	20	20	8021B	PCE	0.52	B	UG/L
FM015	SIA0211	5/13/02 11:36	25	25	8021B	PCE	0.54	B	UG/L
FM015	SIA0212	5/13/02 11:55	30	30	8021B	PCE	0.6	B	UG/L
FM015	SIA0214	5/13/02 12:52	35	35	8021B	PCE	0.7	B	UG/L
FM015	SIA0215	5/13/02 13:04	40	40	8021B	PCE	0.52	B	UG/L
FM015	SIA0216	5/13/02 13:26	45	45	8021B	PCE	0.75	B	UG/L
FM015	SIA0217	5/13/02 13:46	50	50	8021B	PCE	0.81	B	UG/L
FM016	SIA0273	5/15/02 13:22	5	5	8021B	PCE	0.1	B	UG/L
FM016	SIA0274	5/15/02 13:33	10	10	8021B	PCE	0.17	B	UG/L
FM016	SIA0275	5/15/02 13:51	15	15	8021B	PCE	0.19	B	UG/L
FM016	SIA0277	5/15/02 14:31	20	20	8021B	PCE	0.22	B	UG/L
FM018	SIA0315	5/17/02 9:39	5	5	8021B	PCE	0.99	B	UG/L
FM018	SIA0316	5/17/02 9:50	10	10	8021B	PCE	0.82	B	UG/L
FM018	SIA0317	5/17/02 10:09	15	15	8021B	PCE	1.36	=	UG/L
FM018	SIA0318	5/17/02 10:27	20	20	8021B	PCE	1.36	=	UG/L

Table C-1
PCE Soil Vapor Analytical Results
 (Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)
 Griggs and Walnut Groundwater Plume Site
 Las Cruces, New Mexico

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
FM019	SIA0309	5/17/02 8:05	5	5	8021B	PCE	0.2	B	UG/L
FM019	SIA0310	5/17/02 8:14	10	10	8021B	PCE	0.12	B	UG/L
FM019	SIA0311	5/17/02 8:34	15	15	8021B	PCE	0.07	B	UG/L
FM019	SIA0314	5/17/02 9:14	20	20	8021B	PCE	0.2	B	UG/L
FM020	SIA0218	5/13/02 14:53	5	5	8021B	PCE	0.19	B	UG/L
FM020	SIA0219	5/13/02 15:06	10	10	8021B	PCE	0.2	B	UG/L
FM020	SIA0220	5/13/02 15:23	15	15	8021B	PCE	0.24	B	UG/L
FM020	SIA0221	5/13/02 15:40	20	20	8021B	PCE	0.3	B	UG/L
FM021	SIA0288	5/16/02 9:00	5	5	8021B	PCE	0.05	<	UG/L
FM021	SIA0289	5/16/02 9:14	10	10	8021B	PCE	0.05	<	UG/L
FM021	SIA0290	5/16/02 9:34	15	15	8021B	PCE	0.05	<	UG/L
FM021	SIA0291	5/16/02 9:54	20	20	8021B	PCE	0.05	<	UG/L
FM023	SIA0251	5/14/02 16:42	5	5	8021B	PCE	1.17	=	UG/L
FM023	SIA0252	5/14/02 16:56	10	10	8021B	PCE	1.48	=	UG/L
FM023	SIA0253	5/14/02 17:10	15	15	8021B	PCE	1.8	=	UG/L
FM023	SIA0254	5/14/02 17:28	20	20	8021B	PCE	1.96	=	UG/L
FM024	SIA0225	5/14/02 7:38	5	5	8021B	PCE	0.4	B	UG/L
FM024	SIA0226	5/14/02 7:52	10	10	8021B	PCE	0.47	B	UG/L
FM024	SIA0227	5/14/02 8:10	15	15	8021B	PCE	0.63	B	UG/L
FM024	SIA0229	5/14/02 8:50	20	20	8021B	PCE	1.1	=	UG/L
FM026	SIA0292	5/16/02 10:44	5	5	8021B	PCE	0.05	<	UG/L
FM026	SIA0293	5/16/02 10:55	10	10	8021B	PCE	0.17	B	UG/L
FM026	SIA0295	5/16/02 11:35	15	15	8021B	PCE	0.29	B	UG/L
FM026	SIA0296	5/16/02 11:55	20	20	8021B	PCE	0.22	B	UG/L
FM027	SIA0278	5/15/02 15:03	5	5	8021B	PCE	0.12	B	UG/L
FM027	SIA0279	5/15/02 15:17	10	10	8021B	PCE	0.1	B	UG/L
FM027	SIA0280	5/15/02 15:36	15	15	8021B	PCE	0.15	B	UG/L
FM027	SIA0281	5/15/02 15:55	20	20	8021B	PCE	0.18	B	UG/L
FM028	SIA0284	5/16/02 7:43	5	5	8021B	PCE	0.05	<	UG/L
FM028	SIA0285	5/16/02 7:58	10	10	8021B	PCE	0.05	<	UG/L
FM028	SIA0286	5/16/02 8:15	15	15	8021B	PCE	0.05	<	UG/L
FM028	SIA0287	5/16/02 8:35	20	20	8021B	PCE	0.05	<	UG/L
FM029	SIA0303	5/16/02 14:38	5	5	8021B	PCE	0.8	B	UG/L
FM029	SIA0304	5/16/02 14:52	10	10	8021B	PCE	1.02	=	UG/L
FM029	SIA0305	5/16/02 15:08	15	15	8021B	PCE	1.29	=	UG/L
FM029	SIA0306	5/16/02 15:30	20	20	8021B	PCE	1.48	=	UG/L
FM030	SIA0246	5/14/02 14:48	5	5	8021B	PCE	0.5	B	UG/L
FM030	SIA0247	5/14/02 14:59	10	10	8021B	PCE	0.62	B	UG/L
FM030	SIA0248	5/14/02 15:17	15	15	8021B	PCE	0.76	B	UG/L
FM030	SIA0249	5/14/02 15:35	20	20	8021B	PCE	0.81	B	UG/L
FM031	SIA0241	5/14/02 13:16	5	5	8021B	PCE	0.55	B	UG/L
FM031	SIA0242	5/14/02 13:27	10	10	8021B	PCE	0.67	B	UG/L
FM031	SIA0243	5/14/02 13:46	15	15	8021B	PCE	0.79	B	UG/L
FM031	SIA0245	5/14/02 14:26	20	20	8021B	PCE	0.98	B	UG/L
GWMW01	SIA0349	5/18/02 16:33	30	30	8021B	PCE	0.05	<	UG/L
MH001	SIA0534	6/4/02 13:35	manhole		8021B	PCE	0.18	B	UG/L
MH002	SIA0535	6/4/02 13:50	manhole		8021B	PCE	0.07	B	UG/L
MH003	SIA0536	6/4/02 14:21	manhole		8021B	PCE	0.05	<	UG/L
MH004	SIA0537	6/4/02 14:38	manhole		8021B	PCE	0.05	<	UG/L

Table C-1**PCE Soil Vapor Analytical Results**

(Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)

*Griggs and Walnut Groundwater Plume Site**Las Cruces, New Mexico*

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
NG001	SIA0157	5/5/02 9:16	5	5	8021B	PCE	0.65	B	UG/L
NG001	SIA0158	5/5/02 9:27	10	10	8021B	PCE	1.81	=	UG/L
NG001	SIA0159	5/5/02 9:46	15	15	8021B	PCE	1.56	=	UG/L
NG001	SIA0160	5/5/02 10:04	20	20	8021B	PCE	2.09	=	UG/L
NG002	SIA0152	5/5/02 7:39	5	5	8021B	PCE	0.22	B	UG/L
NG002	SIA0153	5/5/02 7:53	10	10	8021B	PCE	0.91	B	UG/L
NG002	SIA0155	5/5/02 8:26	15	15	8021B	PCE	2.08	=	UG/L
NG002	SIA0156	5/5/02 8:39	20	20	8021B	PCE	1.14	=	UG/L
NG003	SIA0166	5/5/02 12:28	5	5	8021B	PCE	0.26	B	UG/L
NG003	SIA0167	5/5/02 12:41	10	10	8021B	PCE	0.48	B	UG/L
NG003	SIA0168	5/5/02 12:59	15	15	8021B	PCE	0.67	B	UG/L
NG003	SIA0171	5/5/02 13:48	20	20	8021B	PCE	0.88	B	UG/L
NG005	SIA0146	5/4/02 15:04	5	5	8021B	PCE	1.68	=	UG/L
NG005	SIA0147	5/4/02 15:15	10	10	8021B	PCE	2.66	=	UG/L
NG005	SIA0148	5/4/02 15:34	15	15	8021B	PCE	3.19	=	UG/L
NG005	SIA0149	5/4/02 15:50	20	20	8021B	PCE	3.48	=	UG/L
NG007	SIA0161	5/5/02 10:40	5	5	8021B	PCE	0.82	B	UG/L
NG007	SIA0162	5/5/02 10:51	10	10	8021B	PCE	1.29	=	UG/L
NG007	SIA0164	5/5/02 11:35	15	15	8021B	PCE	1.77	=	UG/L
NG007	SIA0165	5/5/02 11:48	20	20	8021B	PCE	2	=	UG/L
NG013	SIA0172	5/5/02 14:28	5	5	8021B	PCE	0.21	B	UG/L
NG013	SIA0173	5/5/02 14:41	10	10	8021B	PCE	0.32	B	UG/L
NG013	SIA0174	5/5/02 14:58	15	15	8021B	PCE	0.43	B	UG/L
NG013	SIA0175	5/5/02 15:16	20	20	8021B	PCE	0.5	B	UG/L
NG014	SIA0116	5/3/02 12:40	5	5	8021B	PCE	0.86	B	UG/L
NG014	SIA0117	5/3/02 12:52	10	10	8021B	PCE	1.13	=	UG/L
NG014	SIA0118	5/3/02 13:12	15	15	8021B	PCE	1.35	=	UG/L
NG014	SIA0119	5/3/02 13:33	20	20	8021B	PCE	1.46	=	UG/L
NG016	SIA0129	5/4/02 8:17	5	5	8021B	PCE	0.45	B	UG/L
NG016	SIA0130	5/4/02 8:34	10	10	8021B	PCE	1.02	=	UG/L
NG016	SIA0131	5/4/02 8:50	15	15	8021B	PCE	2.52	=	UG/L
NG016	SIA0132	5/4/02 9:09	20	20	8021B	PCE	2.5	=	UG/L
NG016	SIA0133	5/4/02 9:29	20	20	8021B	PCE	3.26	=	UG/L
NG016	SIA0134	5/4/02 9:46	30	30	8021B	PCE	3.45	=	UG/L
NG016	SIA0135	5/4/02 10:06	35	35	8021B	PCE	0.45	B	UG/L
NG016	SIA0136	5/4/02 11:08	40	40	8021B	PCE	3.9	=	UG/L
NG016	SIA0138	5/4/02 11:54	45	45	8021B	PCE	5.3	=	UG/L
NG016	SIA0139	5/4/02 12:10	50	50	8021B	PCE	4.92	=	UG/L
NG018	SIA0120	5/3/02 14:15	5	5	8021B	PCE	0.38	B	UG/L
NG018	SIA0121	5/3/02 14:26	10	10	8021B	PCE	0.49	B	UG/L
NG018	SIA0122	5/3/02 14:44	15	15	8021B	PCE	0.66	B	UG/L
NG018	SIA0123	5/3/02 15:00	20	20	8021B	PCE	0.84	B	UG/L
NG019	SIA0124	5/3/02 15:50	5	5	8021B	PCE	0.28	B	UG/L
NG019	SIA0125	5/3/02 16:07	10	10	8021B	PCE	0.32	B	UG/L
NG019	SIA0126	5/3/02 16:22	15	15	8021B	PCE	0.37	B	UG/L
NG019	SIA0127	5/3/02 16:42	20	20	8021B	PCE	0.35	B	UG/L
NG025	SIA0107	5/3/02 9:23	5	5	8021B	PCE	0.35	B	UG/L
NG025	SIA0108	5/3/02 9:35	10	10	8021B	PCE	0.58	B	UG/L
NG025	SIA0109	5/3/02 9:54	15	15	8021B	PCE	0.86	B	UG/L
NG025	SIA0110	5/3/02 10:12	20	20	8021B	PCE	0.98	B	UG/L

Table C-1
PCE Soil Vapor Analytical Results
 (Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)
 Griggs and Walnut Groundwater Plume Site
 Las Cruces, New Mexico

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
NG026	SIA0111	5/3/02 10:40	5	5	8021B	PCE	0.36	B	UG/L
NG026	SIA0112	5/3/02 10:51	10	10	8021B	PCE	0.66	B	UG/L
NG026	SIA0114	5/3/02 11:52	15	15	8021B	PCE	1.21	=	UG/L
NG026	SIA0115	5/3/02 12:08	20	20	8021B	PCE	1.31	=	UG/L
NG029	SIA0093	5/2/02 14:00	5	5	8021B	PCE	0.12	B	UG/L
NG029	SIA0094	5/2/02 14:16	10	10	8021B	PCE	0.18	B	UG/L
NG029	SIA0095	5/2/02 14:34	15	15	8021B	PCE	0.25	B	UG/L
NG029	SIA0096	5/2/02 14:48	20	20	8021B	PCE	0.33	B	UG/L
NG030	SIA0089	5/2/02 12:45	5	5	8021B	PCE	0.2	B	UG/L
NG030	SIA0090	5/2/02 12:59	10	10	8021B	PCE	0.2	B	UG/L
NG030	SIA0091	5/2/02 13:15	15	15	8021B	PCE	0.24	B	UG/L
NG030	SIA0092	5/2/02 13:35	20	20	8021B	PCE	0.24	B	UG/L
NG031	SIA0103	5/3/02 8:04	5	5	8021B	PCE	0.35	B	UG/L
NG031	SIA0104	5/3/02 8:18	10	10	8021B	PCE	0.53	B	UG/L
NG031	SIA0105	5/3/02 8:36	15	15	8021B	PCE	0.54	B	UG/L
NG031	SIA0106	5/3/02 8:55	20	20	8021B	PCE	0.69	B	UG/L
NG032	SIA0098	5/2/02 15:26	5	5	8021B	PCE	0.35	B	UG/L
NG032	SIA0099	5/2/02 15:44	10	10	8021B	PCE	0.6	B	UG/L
NG032	SIA0100	5/2/02 16:24	15	15	8021B	PCE	0.91	B	UG/L
NG032	SIA0101	5/2/02 16:44	20	20	8021B	PCE	1.11	=	UG/L
NG033	SIA0141	5/4/02 13:22	5	5	8021B	PCE	1.65	=	UG/L
NG033	SIA0142	5/4/02 13:32	10	10	8021B	PCE	2.16	=	UG/L
NG033	SIA0143	5/4/02 13:49	15	15	8021B	PCE	2.38	=	UG/L
NG033	SIA0145	5/4/02 14:25	20	20	8021B	PCE	2.57	=	UG/L
PA001	SIA0363	5/19/02 13:27	10	10	8021B	PCE	0.26	B	UG/L
PA001	SIA0364	5/19/02 13:38	24	24	8021B	PCE	0.26	B	UG/L
PA002	SIA0361	5/19/02 12:51	10	10	8021B	PCE	0.19	B	UG/L
PA002	SIA0362	5/19/02 13:01	24	24	8021B	PCE	0.22	B	UG/L
PA005	SIA0359	5/19/02 11:32	10	10	8021B	PCE	0.05	<	UG/L
PA005	SIA0360	5/19/02 11:44	24	24	8021B	PCE	0.05	<	UG/L
PA006	SIA0357	5/19/02 10:58	10	10	8021B	PCE	0.05	<	UG/L
PA006	SIA0358	5/19/02 11:08	24	24	8021B	PCE	0.05	<	UG/L
PA007	SIA0355	5/19/02 9:56	10	10	8021B	PCE	0.11	B	UG/L
PA007	SIA0356	5/19/02 10:08	24	24	8021B	PCE	0.05	<	UG/L
PA008	SIA0346	5/18/02 14:44	10	10	8021B	PCE	0.19	B	UG/L
PA008	SIA0347	5/18/02 14:56	24	24	8021B	PCE	0.42	B	UG/L
PA009	SIA0344	5/18/02 14:06	10	10	8021B	PCE	0.21	B	UG/L
PA009	SIA0345	5/18/02 14:17	24	24	8021B	PCE	0.55	B	UG/L
PA010	SIA0343	5/18/02 13:12	10	10	8021B	PCE	0.24	B	UG/L
PA011	SIA0341	5/18/02 12:34	10	10	8021B	PCE	0.61	B	UG/L
PA011	SIA0342	5/18/02 12:45	24	24	8021B	PCE	0.57	B	UG/L
PA012	SIA0339	5/18/02 11:22	12	12	8021B	PCE	1.96	=	UG/L
PA012	SIA0340	5/18/02 11:33	24	24	8021B	PCE	1.49	=	UG/L
PA013	SIA0336	5/18/02 10:20	10	10	8021B	PCE	2.7	=	UG/L
PA013	SIA0338	5/18/02 10:55	24	24	8021B	PCE	3.35	=	UG/L
PA014	SIA0334	5/18/02 9:24	10	10	8021B	PCE	0.41	B	UG/L
PA014	SIA0335	5/18/02 9:35	22	22	8021B	PCE	0.39	B	UG/L
PA015	SIA0351	5/19/02 8:25	10	10	8021B	PCE	0.6	B	UG/L
PA015	SIA0354	5/19/02 9:11	24	24	8021B	PCE	0.79	B	UG/L

Table C-1**PCE Soil Vapor Analytical Results**

(Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)

*Griggs and Walnut Groundwater Plume Site**Las Cruces, New Mexico*

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
PA016	SIA0330	5/18/02 7:45	10	10	8021B	PCE	0.18	B	UG/L
PA016	SIA0331	5/18/02 8:06	24	24	8021B	PCE	0.09	B	UG/L
PA017	SIA0327	5/17/02 14:51	10	10	8021B	PCE	0.21	B	UG/L
PA017	SIA0328	5/17/02 15:06	24	24	8021B	PCE	0.29	B	UG/L
PA018	SIA0386	5/28/02 16:37	10	10	8021B	PCE	1.9	=	UG/L
PA018	SIA0387	5/28/02 16:52	24	24	8021B	PCE	3.15	=	UG/L
PA019	SIA0390	5/29/02 8:11	10	10	8021B	PCE	1.91	=	UG/L
PA019	SIA0391	5/29/02 8:22	24	24	8021B	PCE	0.29	B	UG/L
PA020	SIA0392	5/29/02 8:48	10	10	8021B	PCE	0.15	B	UG/L
PA020	SIA0393	5/29/02 9:00	23	23	8021B	PCE	0.33	B	UG/L
PA021	SIA0395	5/29/02 9:53	10	10	8021B	PCE	0.42	B	UG/L
PA021	SIA0398	5/29/02 10:33	24	24	8021B	PCE	0.51	B	UG/L
PA022	SIA0593	6/12/02 7:55	10	10	8021B	PCE	2.78	=	UG/L
PA022	SIA0594	6/12/02 8:05	24	24	8021B	PCE	2.4	=	UG/L
PA023	SIA0406	5/29/02 15:09	10	10	8021B	PCE	8.41	=	UG/L
PA023	SIA0407	5/29/02 15:21	24	24	8021B	PCE	14.5	=	UG/L
PA024	SIA0408	5/29/02 15:57	10	10	8021B	PCE	1.09	=	UG/L
PA024	SIA0409	5/29/02 16:10	24	24	8021B	PCE	1.24	=	UG/L
PA025	SIA0412	5/30/02 7:41	10	10	8021B	PCE	0.59	B	UG/L
PA025	SIA0413	5/30/02 8:00	20	20	8021B	PCE	0.23	B	UG/L
PA025	SIA0414	5/30/02 8:17	30	30	8021B	PCE	0.2	B	UG/L
PA025	SIA0417	5/30/02 9:02	40	40	8021B	PCE	0.74	B	UG/L
PA025	SIA0418	5/30/02 9:17	50	50	8021B	PCE	1.12	=	UG/L
PA026	SIA0424	5/30/02 10:49	10	10	8021B	PCE	1.68	=	UG/L
PA026	SIA0425	5/30/02 11:01	24	24	8021B	PCE	1.86	=	UG/L
PA027	SIA0426	5/30/02 11:41	10	10	8021B	PCE	1.78	=	UG/L
PA027	SIA0427	5/30/02 11:52	24	24	8021B	PCE	2	=	UG/L
PA028	SIA0428	5/30/02 13:01	10	10	8021B	PCE	1.77	=	UG/L
PA028	SIA0429	5/30/02 13:14	24	24	8021B	PCE	2.55	=	UG/L
PA029	SIA0430	5/30/02 13:44	10	10	8021B	PCE	0.88	B	UG/L
PA029	SIA0433	5/30/02 13:58	24	24	8021B	PCE	0.89	B	UG/L
PA030	SIA0435	5/30/02 15:12	10	10	8021B	PCE	0.48	B	UG/L
PA030	SIA0438	5/30/02 15:25	24	24	8021B	PCE	0.82	B	UG/L
PA031	SIA0439	5/30/02 16:01	10	10	8021B	PCE	0.48	B	UG/L
PA031	SIA0440	5/30/02 16:15	24	24	8021B	PCE	0.71	B	UG/L
PA032	SIA0444	5/31/02 7:54	10	10	8021B	PCE	0.28	B	UG/L
PA032	SIA0445	5/31/02 8:13	24	24	8021B	PCE	0.51	B	UG/L
PA033	SIA0447	5/31/02 8:45	10	10	8021B	PCE	0.23	B	UG/L
PA033	SIA0448	5/31/02 8:54	24	24	8021B	PCE	0.78	B	UG/L
PA034	SIA0505	6/3/02 7:52	10	10	8021B	PCE	0.68	B	UG/L
PA034	SIA0506	6/3/02 8:03	24	24	8021B	PCE	0.9	B	UG/L
PA035	SIA0507	6/3/02 8:39	10	10	8021B	PCE	1	=	UG/L
PA035	SIA0508	6/3/02 8:50	24	24	8021B	PCE	0.72	B	UG/L
PA036	SIA0509	6/3/02 10:01	10	10	8021B	PCE	0.25	B	UG/L
PA036	SIA0510	6/3/02 10:19	22	22	8021B	PCE	0.22	B	UG/L
PA037	SIA0511	6/3/02 10:49	10	10	8021B	PCE	0.05	<	UG/L
PA037	SIA0514	6/3/02 11:32	24	24	8021B	PCE	0.05	<	UG/L
PA038	SIA0515	6/3/02 12:34	10	10	8021B	PCE	0.05	<	UG/L
PA038	SIA0516	6/3/02 12:44	24	24	8021B	PCE	0.05	<	UG/L

Table C-1
PCE Soil Vapor Analytical Results
 (Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)
 Griggs and Walnut Groundwater Plume Site
 Las Cruces, New Mexico

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
PA039	SIA0517	6/3/02 13:15	10	10	8021B	PCE	0.05	<	UG/L
PA039	SIA0518	6/3/02 13:26	24	24	8021B	PCE	0.05	<	UG/L
PA041	SIA0519	6/3/02 14:32	10	10	8021B	PCE	0.05	<	UG/L
PA041	SIA0520	6/3/02 14:43	23	23	8021B	PCE	0.05	<	UG/L
PA042	SIA0521	6/3/02 15:10	10	10	8021B	PCE	0.05	<	UG/L
PA042	SIA0522	6/3/02 15:23	24	24	8021B	PCE	0.05	<	UG/L
PA043	SIA0525	6/4/02 8:05	10	10	8021B	PCE	0.31	B	UG/L
PA043	SIA0526	6/4/02 8:24	24	24	8021B	PCE	0.58	B	UG/L
PA044	SIA0527	6/4/02 9:10	10	10	8021B	PCE	1.17	=	UG/L
PA044	SIA0528	6/4/02 9:24	24	24	8021B	PCE	4.63	=	UG/L
PA045	SIA0548	6/10/02 8:19	10	10	8021B	PCE	9.78	=	UG/L
PA045	SIA0549	6/10/02 8:28	24	24	8021B	PCE	0.63	B	UG/L
PA046	SIA0550	6/10/02 8:51	10	10	8021B	PCE	3.36	=	UG/L
PA046	SIA0551	6/10/02 9:07	24	24	8021B	PCE	0.7	B	UG/L
PA047	SIA0552	6/10/02 10:12	10	10	8021B	PCE	4.1	=	UG/L
PA047	SIA0553	6/10/02 10:24	24	24	8021B	PCE	2.23	=	UG/L
PA048	SIA0554	6/10/02 11:02	10	10	8021B	PCE	9.48	=	UG/L
PA048	SIA0555	6/10/02 11:12	24	24	8021B	PCE	14	=	UG/L
PA049	SIA0557	6/10/02 12:25	10	10	8021B	PCE	12.7	=	UG/L
PA049	SIA0558	6/10/02 12:36	24	24	8021B	PCE	17.5	=	UG/L
PA050	SIA0560	6/10/02 13:32	10	10	8021B	PCE	8.38	=	UG/L
PA050	SIA0561	6/10/02 13:43	24	24	8021B	PCE	10.4	=	UG/L
PA051	SIA0562	6/10/02 14:38	10	10	8021B	PCE	4.15	=	UG/L
PA051	SIA0563	6/10/02 14:49	24	24	8021B	PCE	4.58	=	UG/L
PA052	SIA0595	6/12/02 8:43	10	10	8021B	PCE	1.9	=	UG/L
PA052	SIA0596	6/12/02 8:52	24	24	8021B	PCE	0.71	B	UG/L
PA053	SIA0564	6/10/02 15:19	10	10	8021B	PCE	2.17	=	UG/L
PA053	SIA0565	6/10/02 15:50	24	24	8021B	PCE	2.77	=	UG/L
PA054	SIA0607	6/12/02 12:32	10	10	8021B	PCE	2.28	=	UG/L
PA054	SIA0608	6/12/02 12:42	24	24	8021B	PCE	2.86	=	UG/L
PA055	SIA0610	6/12/02 13:46	10	10	8021B	PCE	2.36	=	UG/L
PA055	SIA0611	6/12/02 13:58	24	24	8021B	PCE	3.02	=	UG/L
PA056	SIA0614	6/13/02 8:08	10	10	8021B	PCE	6.75	=	UG/L
PA056	SIA0615	6/13/02 8:17	24	24	8021B	PCE	4.15	=	UG/L
PA057	SIA0616	6/13/02 8:42	10	10	8021B	PCE	2.23	=	UG/L
PA057	SIA0617	6/13/02 8:55	24	24	8021B	PCE	0.23	B	UG/L
PA058	SIA0618	6/13/02 9:56	10	10	8021B	PCE	2.85	=	UG/L
PA058	SIA0619	6/13/02 10:11	24	24	8021B	PCE	2.25	=	UG/L
PA059	SIA0621	6/13/02 11:10	10	10	8021B	PCE	1.48	=	UG/L
PA059	SIA0622	6/13/02 11:22	24	24	8021B	PCE	2.73	=	UG/L
PA060	SIA0624	6/13/02 12:19	10	10	8021B	PCE	1.21	=	UG/L
PA060	SIA0625	6/13/02 12:30	24	24	8021B	PCE	2.33	=	UG/L
PA063	SIA0653	6/14/02 13:27	10	10	8021B	PCE	0.68	B	UG/L
PA063	SIA0654	6/14/02 13:39	24	24	8021B	PCE	1.55	=	UG/L
PA064	SIA0627	6/13/02 13:16	10	10	8021B	PCE	1.99	=	UG/L
PA064	SIA0628	6/13/02 13:32	24	24	8021B	PCE	3.58	=	UG/L
PA065	SIA0649	6/14/02 11:45	10	10	8021B	PCE	3.03	=	UG/L
PA065	SIA0650	6/14/02 11:55	24	24	8021B	PCE	3.52	=	UG/L
PA066	SIA0645	6/14/02 9:38	10	10	8021B	PCE	1.41	=	UG/L

Table C-1
PCE Soil Vapor Analytical Results
 (Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)
 Griggs and Walnut Groundwater Plume Site
 Las Cruces, New Mexico

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
PA066	SIA0646	6/14/02 9:50	24	24	8021B	PCE	0.19	B	UG/L
PA067	SIA0657	6/14/02 15:09	10	10	8021B	PCE	6.67	=	UG/L
PA067	SIA0658	6/14/02 15:20	24	24	8021B	PCE	12.7	=	UG/L
PA068	SIA0659	6/14/02 15:46	10	10	8021B	PCE	5.61	=	UG/L
PA068	SIA0660	6/14/02 15:57	24	24	8021B	PCE	11.4	=	UG/L
PA069	SIA0643	6/14/02 9:02	10	10	8021B	PCE	4.23	=	UG/L
PA069	SIA0644	6/14/02 9:11	24	24	8021B	PCE	0.84	B	UG/L
PA070	SIA0647	6/14/02 10:40	10	10	8021B	PCE	0.08	B	UG/L
PA070	SIA0648	6/14/02 10:52	24	24	8021B	PCE	0.64	B	UG/L
PA071	SIA0651	6/14/02 12:22	10	10	8021B	PCE	1.73	=	UG/L
PA071	SIA0652	6/14/02 12:33	22	22	8021B	PCE	2.88	=	UG/L
PA072	SIA0655	6/14/02 14:02	10	10	8021B	PCE	1.25	=	UG/L
PA072	SIA0656	6/14/02 14:16	24	24	8021B	PCE	1.54	=	UG/L
PA073	SIA0634	6/13/02 16:55	10	10	8021B	PCE	6.67	=	UG/L
PA073	SIA0635	6/13/02 17:10	24	24	8021B	PCE	11.9	=	UG/L
PA074	SIA0636	6/13/02 17:34	10	10	8021B	PCE	5.33	=	UG/L
PA074	SIA0637	6/13/02 17:47	24	24	8021B	PCE	9.16	=	UG/L
PA075	SIA0639	6/14/02 7:20	10	10	8021B	PCE	1.32	=	UG/L
PA075	SIA0640	6/14/02 7:37	24	24	8021B	PCE	0.12	B	UG/L
PA076	SIA0641	6/14/02 8:02	10	10	8021B	PCE	2.23	=	UG/L
PA076	SIA0642	6/14/02 8:13	24	24	8021B	PCE	0.2	B	UG/L
PA077	SIA0629	6/13/02 14:29	10	10	8021B	PCE	12.5	=	UG/L
PA077	SIA0630	6/13/02 14:39	20	20	8021B	PCE	15	=	UG/L
PA077	SIA0631	6/13/02 15:00	30	30	8021B	PCE	19.1	=	UG/L
PA077	SIA0632	6/13/02 15:21	40	40	8021B	PCE	21.7	=	UG/L
PA077	SIA0633	6/13/02 15:42	50	50	8021B	PCE	25.3	=	UG/L
PA078	SIA0589	6/11/02 16:38	10	10	8021B	PCE	0.07	B	UG/L
PA078	SIA0590	6/11/02 16:47	24	24	8021B	PCE	0.09	B	UG/L
PA079	SIA0604	6/12/02 11:14	10	10	8021B	PCE	0.11	B	UG/L
PA079	SIA0606	6/12/02 11:24	24	24	8021B	PCE	0.08	B	UG/L
PA080	SIA0600	6/12/02 9:51	10	10	8021B	PCE	2.06	=	UG/L
PA080	SIA0603	6/12/02 10:34	24	24	8021B	PCE	1.56	=	UG/L
PA081	SIB0002	8/19/02 10:42	10	10	8021B	PCE	0.05	<	UG/L
PA081	SIB0003	8/19/02 10:55	16	16	8021B	PCE	0.05	<	UG/L
PA082	SIB0004	8/19/02 11:45	10	10	8021B	PCE	0.05	<	UG/L
PA082	SIB0005	8/19/02 11:58	24	24	8021B	PCE	0.05	<	UG/L
PA083	SIB0007	8/19/02 13:15	10	10	8021B	PCE	0.05	<	UG/L
PA083	SIB0008	8/19/02 13:54	24	24	8021B	PCE	0.05	<	UG/L
PA084	SIB0009	8/19/02 14:58	10	10	8021B	PCE	0.05	<	UG/L
PA084	SIB0010	8/19/02 15:09	24	24	8021B	PCE	0.05	<	UG/L
PA085	SIB0011	8/19/02 16:14	10	10	8021B	PCE	0.05	<	UG/L
PA085	SIB0012	8/19/02 16:26	24	24	8021B	PCE	0.05	<	UG/L
PA086	SIB0013	8/19/02 16:54	10	10	8021B	PCE	0.05	<	UG/L
PA086	SIB0014	8/19/02 17:07	24	24	8021B	PCE	0.05	<	UG/L
PA087	SIB0016	8/20/02 8:22	10	10	8021B	PCE	0.05	<	UG/L
PA087	SIB0017	8/20/02 8:47	24	24	8021B	PCE	0.05	<	UG/L
PA088	SIB0018	8/20/02 9:25	10	10	8021B	PCE	0.07	B	UG/L
PA088	SIB0019	8/20/02 9:41	24	24	8021B	PCE	0.06	B	UG/L
PA089	SIB0021	8/20/02 11:11	10	10	8021B	PCE	0.05	<	UG/L

Table C-1
PCE Soil Vapor Analytical Results
 (Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)
 Griggs and Walnut Groundwater Plume Site
 Las Cruces, New Mexico

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
PA089	SIB0022	8/20/02 11:25	24	24	8021B	PCE	0.05	<	UG/L
PA090	SIB0023	8/20/02 11:55	10	10	8021B	PCE	0.05	<	UG/L
PA090	SIB0024	8/20/02 12:05	24	24	8021B	PCE	0.05	<	UG/L
PA091	SIB0047	8/21/02 13:40	10	10	8021B	PCE	0.3	B	UG/L
PA091	SIB0048	8/21/02 14:03	24	24	8021B	PCE	0.73	B	UG/L
PA092	SIB0049	8/21/02 14:32	10	10	8021B	PCE	0.48	B	UG/L
PA092	SIB0050	8/21/02 14:44	24	24	8021B	PCE	0.5	B	UG/L
PA093	SIB0051	8/21/02 15:34	10	10	8021B	PCE	0.36	B	UG/L
PA093	SIB0052	8/21/02 15:46	22	22	8021B	PCE	0.56	B	UG/L
R1001	SIA0401	5/29/02 13:02	10	10	8021B	PCE	0.05	<	UG/L
R1001	SIA0402	5/29/02 13:12	24	24	8021B	PCE	0.05	<	UG/L
R1002	SIA0399	5/29/02 11:43	10	10	8021B	PCE	0.05	<	UG/L
R1002	SIA0400	5/29/02 11:52	24	24	8021B	PCE	0.05	<	UG/L
R1004	SIA0403	5/29/02 13:46	10	10	8021B	PCE	0.1	B	UG/L
R1004	SIA0404	5/29/02 13:58	24	24	8021B	PCE	0.23	B	UG/L
R2002	SIA0540	6/5/02 7:42	10	10	8021B	PCE	0.05	<	UG/L
R2002	SIA0541	6/5/02 7:56	24	24	8021B	PCE	0.05	<	UG/L
R2004	SIA0542	6/5/02 8:32	10	10	8021B	PCE	0.05	<	UG/L
R2004	SIA0543	6/5/02 8:42	24	24	8021B	PCE	0.05	<	UG/L
R2006	SIA0544	6/5/02 10:09	10	10	8021B	PCE	0.05	<	UG/L
R2006	SIA0545	6/5/02 10:20	24	24	8021B	PCE	0.05	<	UG/L
R2008	SIA0477	6/1/02 15:32	10	10	8021B	PCE	0.13	B	UG/L
R2008	SIA0478	6/1/02 15:43	24	24	8021B	PCE	0.17	B	UG/L
R2009	SIB0082	8/23/02 10:14	10	10	8021B	PCE	0.54	B	UG/L
R2009	SIB0083	8/23/02 10:30	21	21	8021B	PCE	0.68	B	UG/L
R2010	SIB0084	8/23/02 11:02	10	10	8021B	PCE	0.05	<	UG/L
R2010	SIB0086	8/24/02 9:57	22	22	8021B	PCE	2.25	=	UG/L
R2011	SIB0087	8/24/02 10:35	10	10	8021B	PCE	0.14	B	UG/L
R2011	SIB0088	8/24/02 10:47	21	21	8021B	PCE	0.09	B	UG/L
R2012	SIB0144	8/26/02 16:55	5	5	8021B	PCE	0.05	<	UG/L
R2013	SIB0145	8/26/02 17:24	10	10	8021B	PCE	0.05	<	UG/L
R2013	SIB0146	8/26/02 17:34	23	23	8021B	PCE	0.05	<	UG/L
R2014	SIB0161	8/27/02 13:45	10	10	8021B	PCE	0.05	B	UG/L
R2014	SIB0162	8/27/02 13:55	24	24	8021B	PCE	0.07	B	UG/L
R2015	SIB0169	8/28/02 7:38	10	10	8021B	PCE	3.34	=	UG/L
R2015	SIB0170	8/28/02 7:51	24	24	8021B	PCE	2.75	=	UG/L
R2016	SIB0171	8/28/02 8:20	10	10	8021B	PCE	6.68	=	UG/L
R2016	SIB0172	8/28/02 8:33	24	24	8021B	PCE	2.83	=	UG/L
R2017	SIB0174	8/28/02 9:27	10	10	8021B	PCE	8.84	=	UG/L
R2017	SIB0175	8/28/02 9:42	24	24	8021B	PCE	1.93	=	UG/L
R3001	SIA0449	5/31/02 13:28	10	10	8021B	PCE	0.86	B	UG/L
R3001	SIA0451	5/31/02 13:44	24	24	8021B	PCE	1.47	=	UG/L
R4001	SIA0453	5/31/02 14:48	10	10	8021B	PCE	1.3	=	UG/L
R4001	SIA0454	5/31/02 15:00	24	24	8021B	PCE	1.82	=	UG/L
R4002	SIA0456	5/31/02 16:14	10	10	8021B	PCE	1.54	=	UG/L
R4002	SIA0457	5/31/02 16:26	24	24	8021B	PCE	2.01	=	UG/L
R5001	SIA0458	5/31/02 16:54	10	10	8021B	PCE	1.15	=	UG/L
R5001	SIA0459	5/31/02 17:07	24	24	8021B	PCE	1.39	=	UG/L
R5002	SIA0469	6/1/02 11:25	10	10	8021B	PCE	1.21	=	UG/L

Table C-1
PCE Soil Vapor Analytical Results
 (Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)
 Griggs and Walnut Groundwater Plume Site
 Las Cruces, New Mexico

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
R5002	SIA0470	6/1/02 11:37	24	24	8021B	PCE	1.68	=	UG/L
R5003	SIA0462	6/1/02 8:25	10	10	8021B	PCE	1.3	=	UG/L
R5003	SIA0463	6/1/02 8:40	20	20	8021B	PCE	1.01	=	UG/L
R5003	SIA0464	6/1/02 9:02	30	30	8021B	PCE	2.24	=	UG/L
R5003	SIA0467	6/1/02 9:42	40	40	8021B	PCE	2.63	=	UG/L
R5003	SIA0468	6/1/02 9:55	50	50	8021B	PCE	2.84	=	UG/L
R5004	SIA0471	6/1/02 12:05	10	10	8021B	PCE	0.9	B	UG/L
R5004	SIA0472	6/1/02 12:16	24	24	8021B	PCE	1.43	=	UG/L
R5005	SIA0570	6/11/02 8:05	10	10	8021B	PCE	1.16	=	UG/L
R5005	SIA0571	6/11/02 8:24	24	24	8021B	PCE	0.47	B	UG/L
R5006	SIA0575	6/11/02 9:26	10	10	8021B	PCE	0.81	B	UG/L
R5006	SIA0576	6/11/02 9:36	24	24	8021B	PCE	1.02	=	UG/L
R5007	SIA0577	6/11/02 10:48	10	10	8021B	PCE	0.7	B	UG/L
R5007	SIA0579	6/11/02 11:27	24	24	8021B	PCE	0.96	B	UG/L
R5008	SIA0580	6/11/02 12:04	10	10	8021B	PCE	0.21	B	UG/L
R5008	SIA0581	6/11/02 12:18	24	24	8021B	PCE	0.4	B	UG/L
R5009	SIA0582	6/11/02 13:18	10	10	8021B	PCE	0.07	B	UG/L
R5009	SIA0583	6/11/02 13:36	24	24	8021B	PCE	0.12	B	UG/L
R5010	SIA0584	6/11/02 14:05	10	10	8021B	PCE	0.05	<	UG/L
R5010	SIA0585	6/11/02 14:15	24	24	8021B	PCE	0.05	<	UG/L
R6001	SIA0473	6/1/02 13:31	10	10	8021B	PCE	1.42	=	UG/L
R6001	SIA0474	6/1/02 13:41	24	24	8021B	PCE	1.56	=	UG/L
R6002	SIA0475	6/1/02 14:09	10	10	8021B	PCE	0.87	=	UG/L
R6002	SIA0476	6/1/02 14:19	24	24	8021B	PCE	1.61	=	UG/L
R7001	SIA0587	6/11/02 15:30	10	10	8021B	PCE	1.19	=	UG/L
R7001	SIA0588	6/11/02 15:40	24	24	8021B	PCE	1.74	=	UG/L
R8001	SIB0103	8/25/02 7:55	10	10	8021B	PCE	0.52	B	UG/L
R8001	SIB0104	8/25/02 8:08	22	22	8021B	PCE	0.55	B	UG/L
R8002	SIB0105	8/25/02 8:42	10	10	8021B	PCE	0.85	B	UG/L
R8002	SIB0106	8/25/02 8:52	24	24	8021B	PCE	0.35	B	UG/L
R8003	SIB0108	8/25/02 10:00	10	10	8021B	PCE	1.11	=	UG/L
R8003	SIB0109	8/25/02 10:12	22	22	8021B	PCE	0.81	B	UG/L
R8004	SIB0110	8/25/02 10:45	10	10	8021B	PCE	4.36	=	UG/L
R8004	SIB0111	8/25/02 11:00	23	23	8021B	PCE	2.74	=	UG/L
R8005	SIB0112	8/25/02 12:02	10	10	8021B	PCE	10.5	=	UG/L
R8005	SIB0113	8/25/02 12:16	20	20	8021B	PCE	13.1	=	UG/L
R9001	SIB0066	8/22/02 11:32	10	10	8021B	PCE	0.43	B	UG/L
R9001	SIB0067	8/22/02 11:40	20	20	8021B	PCE	0.76	B	UG/L
R9001	SIB0069	8/22/02 12:40	30	30	8021B	PCE	0.05	<	UG/L
R9001	SIB0070	8/22/02 13:02	38	38	8021B	PCE	1.87	=	UG/L
R9002	SIB0053	8/21/02 16:20	10	10	8021B	PCE	4.43	=	UG/L
R9002	SIB0054	8/21/02 16:33	24	24	8021B	PCE	6.17	=	UG/L
R9003	SIB0064	8/22/02 10:24	10	10	8021B	PCE	0.05	<	UG/L
R9003	SIB0065	8/22/02 10:36	24	24	8021B	PCE	0.05	<	UG/L
R9004	SIB0096	8/24/02 16:03	10	10	8021B	PCE	6.67	=	UG/L
R9004	SIB0097	8/24/02 16:12	20	20	8021B	PCE	0.7	B	UG/L
R9004	SIB0098	8/24/02 16:35	30	30	8021B	PCE	7.71	=	UG/L
R9004	SIB0099	8/24/02 16:52	40	40	8021B	PCE	1.03	=	UG/L
R9004	SIB0100	8/24/02 17:10	48	48	8021B	PCE	0.87	B	UG/L

Table C-1
PCE Soil Vapor Analytical Results
 (Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)
 Griggs and Walnut Groundwater Plume Site
 Las Cruces, New Mexico

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
S1001	SIB0057	8/22/02 7:36	10	10	8021B	PCE	0.2	B	UG/L
S1001	SIB0058	8/22/02 7:47	24	24	8021B	PCE	0.13	B	UG/L
S1002	SIB0059	8/22/02 8:23	10	10	8021B	PCE	0.66	B	UG/L
S1002	SIB0060	8/22/02 8:35	24	24	8021B	PCE	0.65	B	UG/L
S1003	SIB0062	8/22/02 9:38	10	10	8021B	PCE	0.05	<	UG/L
S1003	SIB0063	8/22/02 9:48	20	20	8021B	PCE	0.05	<	UG/L
S2001	SIB0073	8/22/02 15:21	10	10	8021B	PCE	0.05	<	UG/L
S2001	SIB0074	8/22/02 15:35	15	15	8021B	PCE	0.06	B	UG/L
S2002	SIB0075	8/22/02 16:26	10	10	8021B	PCE	0.08	B	UG/L
S2002	SIB0076	8/22/02 16:36	16	16	8021B	PCE	0.05	B	UG/L
S2004	SIB0124	8/26/02 7:22	10	10	8021B	PCE	0.36	B	UG/L
S2004	SIB0125	8/26/02 7:36	20	20	8021B	PCE	0.58	B	UG/L
S2004	SIB0126	8/26/02 7:56	28	28	8021B	PCE	1	=	UG/L
S2005	SIB0127	8/26/02 8:26	10	10	8021B	PCE	0.05	<	UG/L
S2005	SIB0128	8/26/02 8:38	24	24	8021B	PCE	0.16	B	UG/L
S3001	SIB0094	8/24/02 14:24	10	10	8021B	PCE	0.05	<	UG/L
S3002	SIB0077	8/22/02 17:14	8	8	8021B	PCE	0.05	<	UG/L
S3003	SIB0079	8/23/02 8:14	10	10	8021B	PCE	0.05	<	UG/L
S3003	SIB0080	8/23/02 8:25	16	16	8021B	PCE	0.05	<	UG/L
S3004	SIB0081	8/23/02 8:57	10	10	8021B	PCE	0.05	<	UG/L
S3005	SIB0093	8/24/02 13:46	10	10	8021B	PCE	0.05	<	UG/L
S3006	SIB0092	8/24/02 12:45	10	10	8021B	PCE	0.05	<	UG/L
S3007	SIB0090	8/24/02 12:02	10	10	8021B	PCE	0.05	<	UG/L
S3007	SIB0091	8/24/02 12:17	24	24	8021B	PCE	0.05	<	UG/L
S4001	SIB0115	8/25/02 13:22	10	10	8021B	PCE	1.37	=	UG/L
S4001	SIB0116	8/25/02 13:36	17	17	8021B	PCE	1.81	=	UG/L
S4002	SIB0117	8/25/02 14:34	10	10	8021B	PCE	0.71	B	UG/L
S4002	SIB0119	8/25/02 15:15	21	21	8021B	PCE	0.84	B	UG/L
S4003	SIB0120	8/25/02 15:46	10	10	8021B	PCE	1.11	=	UG/L
S4003	SIB0121	8/25/02 15:56	24	24	8021B	PCE	1.46	=	UG/L
S5001	SIB0148	8/27/02 8:02	10	10	8021B	PCE	0.07	B	UG/L
S5001	SIB0149	8/27/02 8:21	24	24	8021B	PCE	0.07	B	UG/L
S5002	SIB0150	8/27/02 8:50	10	10	8021B	PCE	0.1	B	UG/L
S5002	SIB0151	8/27/02 9:05	24	24	8021B	PCE	0.05	<	UG/L
S6001	SIB0152	8/27/02 10:19	10	10	8021B	PCE	0.05	<	UG/L
S6001	SIB0155	8/27/02 10:48	24	24	8021B	PCE	0.05	<	UG/L
S6002	SIB0156	8/27/02 11:17	10	10	8021B	PCE	0.05	<	UG/L
S6002	SIB0157	8/27/02 11:29	24	24	8021B	PCE	0.05	<	UG/L
S6003	SIB0158	8/27/02 12:34	10	10	8021B	PCE	0.05	<	UG/L
S6003	SIB0159	8/27/02 12:45	23	23	8021B	PCE	0.05	<	UG/L
S7001	SIB0163	8/27/02 14:55	10	10	8021B	PCE	0.05	<	UG/L
S7001	SIB0164	8/27/02 15:04	18	18	8021B	PCE	0.05	<	UG/L
S7002	SIB0165	8/27/02 15:35	10	10	8021B	PCE	0.05	<	UG/L
S7002	SIB0166	8/27/02 15:50	19	19	8021B	PCE	0.05	<	UG/L
SVMP01	SIA0486	6/2/02 10:39	20	20	8021B	PCE	1.01	=	UG/L
SVMP01	SIA0487	6/2/02 10:49	40	40	8021B	PCE	3.03	=	UG/L
SVMP01	SIA0488	6/2/02 11:10	60	60	8021B	PCE	4.4	=	UG/L
SVMP01	SIA0489	6/2/02 11:27	80	80	8021B	PCE	5.53	=	UG/L
SVMP01	SIA0490	6/2/02 12:08	100	100	8021B	PCE	6.83	=	UG/L

Table C-1**PCE Soil Vapor Analytical Results**

(Analyzed in Mobile Lab via EPA Method SW 846/8021B-modified)

*Griggs and Walnut Groundwater Plume Site**Las Cruces, New Mexico*

StationID	Field SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Lab Result	Lab Qualifier	Lab Units
SVMP02	SIA0480	6/2/02 8:13	12	12	8021B	PCE	0.05	<	UG/L
SVMP02	SIA0481	6/2/02 8:30	35	35	8021B	PCE	0.05	<	UG/L
SVMP02	SIA0482	6/2/02 8:50	55	55	8021B	PCE	0.05	<	UG/L
SVMP02	SIA0483	6/2/02 9:12	75	75	8021B	PCE	0.05	<	UG/L
SVMP02	SIA0484	6/2/02 9:36	95	95	8021B	PCE	0.05	<	UG/L
SVMP02	SIA0485	6/2/02 9:55	115	115	8021B	PCE	0.05	<	UG/L
SVMP03	SIA0491	6/2/02 12:52	30	30	8021B	PCE	3.46	=	UG/L
SVMP03	SIA0492	6/2/02 13:05	48	48	8021B	PCE	4.64	=	UG/L
SVMP03	SIA0493	6/2/02 13:23	68	68	8021B	PCE	5.1	=	UG/L
SVMP03	SIA0494	6/2/02 13:42	90	90	8021B	PCE	5.65	=	UG/L
SVMP03	SIA0495	6/2/02 14:04	108	108	8021B	PCE	5.92	=	UG/L
SVMP04	SIA0496	6/2/02 14:43	20	20	8021B	PCE	0.13	B	UG/L
SVMP04	SIA0497	6/2/02 14:54	40	40	8021B	PCE	0.06	B	UG/L
SVMP04	SIA0498	6/2/02 15:17	59	59	8021B	PCE	0.07	B	UG/L
SVMP05	SIA0499	6/2/02 16:08	40	40	8021B	PCE	0.05	<	UG/L
SVMP05	SIA0500	6/2/02 16:47	60	60	8021B	PCE	0.06	B	UG/L
SVMP05	SIA0501	6/2/02 16:59	75	75	8021B	PCE	0.05	<	UG/L
SVMP05	SIA0502	6/2/02 17:18	92	92	8021B	PCE	0.05	<	UG/L
SVMP06	SIA0529	6/4/02 10:08	20	20	8021B	PCE	0.67	B	UG/L
SVMP06	SIA0530	6/4/02 10:18	40	40	8021B	PCE	1.17	=	UG/L
SVMP06	SIA0531	6/4/02 10:38	60	60	8021B	PCE	1.58	=	UG/L
SVMP07	SIA0532	6/4/02 11:27	20	20	8021B	PCE	0.44	B	UG/L
SVMP07	SIA0533	6/4/02 11:37	40	40	8021B	PCE	0.74	B	UG/L

Notes:

= Detected analyte concentration

B Analyte detected below the quantitation limit. Concentration is estimated.

< Analyte not detected at the quantitation limit.

UG/L Micrograms per liter

Table C-2
PCE Ground Water Analytical Results - December 2002
Griggs and Walnut Groundwater Plume Site
Las Cruces, New Mexico

StationID	Sampling Port	EPA CLP SampleID	CH2M HILL SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Result	Qualifier	Unit
CKMW-8	CK-MW8	F03E8	F03E8	12/13/02 8:35	90	90	CVOL	PCE	0.5	U	UG/L
GWMW01	GWMW0101	F08J7DL	SID0038DL	12/11/02 10:46	215	215	CVOL	PCE	38	D	UG/L
GWMW01	GWMW0102	F08J8	SID0039	12/11/02 10:55	275	275	CVOL	PCE	15	=	UG/L
GWMW01	GWMW0104	F08J9	SID0040	12/11/02 11:02	425	425	CVOL	PCE	25	=	UG/L
GWMW01	GWMW0105	F08K0	SID0041	12/11/02 11:08	465	465	CVOL	PCE	11	=	UG/L
GWMW01	GWMW0106	F08K1DL	SID0042DL	12/11/02 11:15	520	520	CVOL	PCE	31	D	UG/L
GWMW01	GWMW0107	F08K2DL	SID0043DL	12/11/02 11:21	555	555	CVOL	PCE	23	D	UG/L
GWMW03	GWMW0301	F08H8	SID0029	12/10/02 14:10	145	145	CVOL	PCE	4.4	=	UG/L
GWMW03	GWMW0302	F08H9	SID0030	12/10/02 14:17	230	230	CVOL	PCE	2.6	=	UG/L
GWMW03	GWMW0303	F08J0	SID0031	12/10/02 14:25	275	275	CVOL	PCE	0.5	U	UG/L
GWMW03	GWMW0304	F08J1DL	SID0032DL	12/10/02 14:38	325	325	CVOL	PCE	1.3	D	UG/L
GWMW03	GWMW0305	F08J3	SID0034	12/10/02 14:49	415	415	CVOL	PCE	0.49	LJ	UG/L
GWMW03	GWMW0306	F08J4	SID0035	12/10/02 14:57	465	465	CVOL	PCE	0.31	LJ	UG/L
GWMW04	GWMW0401	F08G3	SID0015	12/10/02 8:33	95	95	CVOL	PCE	0.5	U	UG/L
GWMW04	GWMW0402	F08G4	SID0016	12/10/02 8:47	150	150	CVOL	PCE	0.5	U	UG/L
GWMW04	GWMW0403	F08G5	SID0017	12/10/02 8:57	225	225	CVOL	PCE	0.5	U	UG/L
GWMW04	GWMW0404	F08G6	SID0018	12/10/02 9:07	325	325	CVOL	PCE	0.5	U	UG/L
GWMW04	GWMW0405	F08G7	SID0019	12/10/02 9:18	405	405	CVOL	PCE	0.5	U	UG/L
GWMW04	GWMW0406	F08G8	SID0021	12/10/02 9:30	465	465	CVOL	PCE	0.5	U	UG/L
GWMW06	GWMW0601	F08F7	SID0008	12/9/02 12:24	105	105	CVOL	PCE	3.6	=	UG/L
GWMW06	GWMW0602	F08F8	SID0009	12/9/02 12:46	170	170	CVOL	PCE	4.4	=	UG/L
GWMW06	GWMW0603	F08G0	SID0011	12/9/02 13:06	220	220	CVOL	PCE	1.3	=	UG/L
GWMW06	GWMW0604	F08G1	SID0012	12/9/02 13:13	310	310	CVOL	PCE	1	=	UG/L
GWMW06	GWMW0605	F08G2	SID0013	12/9/02 13:24	390	390	CVOL	PCE	1.4	=	UG/L
GWMW07	GWMW0701	F08H2	SID0023	12/10/02 11:40	95	95	CVOL	PCE	7.9	=	UG/L
GWMW07	GWMW0702	F08H3	SID0024	12/10/02 11:45	175	175	CVOL	PCE	0.71	=	UG/L
GWMW07	GWMW0703	F08H4	SID0025	12/10/02 11:52	235	235	CVOL	PCE	0.79	=	UG/L
GWMW07	GWMW0704	F08H5	SID0026	12/10/02 11:58	325	325	CVOL	PCE	0.74	=	UG/L
GWMW07	GWMW0705	F08H6	SID0027	12/10/02 12:05	405	405	CVOL	PCE	2.1	=	UG/L
GWMW07	GWMW0706	F08H7	SID0028	12/10/02 12:15	475	475	CVOL	PCE	2.3	=	UG/L
GWMW08	GWMW0801	F08K3	SID0044	12/11/02 12:48	195	195	CVOL	PCE	0.73	=	UG/L
GWMW08	GWMW0802	F08K5	SID0046	12/11/02 12:58	260	260	CVOL	PCE	0.81	=	UG/L
GWMW08	GWMW0803	F08K6	SID0047	12/11/02 13:04	310	310	CVOL	PCE	0.67	=	UG/L
GWMW08	GWMW0804	F08K7RE	SID0048RE	12/11/02 13:10	385	385	CVOL	PCE	0.63	=	UG/L
GWMW08	GWMW0805	F08K8	SID0049	12/11/02 13:15	495	495	CVOL	PCE	0.52	=	UG/L
GWMW08	GWMW0806	F08K9	SID0050	12/11/02 13:20	435	435	CVOL	PCE	0.4	LJ	UG/L
GWMW08	GWMW0807	F08L0RE	SID0051RE	12/11/02 13:25	540	540	CVOL	PCE	0.5	U	UG/L
GWMW09	GWMW0901	F08L3	SID0059	12/12/02 9:35	245	245	CVOL	PCE	4.5	=	UG/L
GWMW09	GWMW0902	F08L4	SID0060	12/12/02 9:42	325	325	CVOL	PCE	18	=	UG/L
GWMW09	GWMW0903	F08L5	SID0061	12/12/02 9:48	375	375	CVOL	PCE	11	=	UG/L
GWMW09	GWMW0904	F08L6DL	SID0062DL	12/12/02 9:56	445	445	CVOL	PCE	27	D	UG/L
GWMW09	GWMW0905	F08L8DL	SID0064DL	12/12/02 10:05	510	510	CVOL	PCE	6.2	D	UG/L
GWMW09	GWMW0906	F08L9	SID0065	12/12/02 10:13	565	565	CVOL	PCE	0.95	=	UG/L
GWMW09	GWMW0907	F08M0	SID0066	12/12/02 10:20	635	635	CVOL	PCE	2.7	=	UG/L
GWMW10	GWMW1001	F0BN0DL	SID0067DL	12/12/02 14:45	255	255	CVOL	PCE	31	D	UG/L
GWMW10	GWMW1002	F0BN1DL	SID0068DL	12/12/02 14:52	325	325	CVOL	PCE	39	D	UG/L
GWMW10	GWMW1003	F0BN2DL	SID0069DL	12/12/02 15:00	375	375	CVOL	PCE	53	D	UG/L
GWMW10	GWMW1004	F0BN3	SID0070	12/12/02 15:06	445	445	CVOL	PCE	18	=	UG/L
GWMW10	GWMW1005	F0BN4DL	SID0071DL	12/12/02 15:18	510	510	CVOL	PCE	29	D	UG/L
GWMW10	GWMW1006	F0BN5DL	SID0072DL	12/12/02 15:25	565	565	CVOL	PCE	29	D	UG/L
GWMW10	GWMW1007	F0BN6	SID0073	12/12/02 15:30	625	625	CVOL	PCE	12	Jv	UG/L
MW-1	MW-1	F03E1	F03E1	12/12/02 13:45	192	192	CVOL	PCE	6.1	=	UG/L
MW-2	MW-2	F03E2	F03E2	12/12/02 13:55	193	193	CVOL	PCE	11	=	UG/L
MW-3	MW-3	F03E3	F03E3	12/12/02 13:55	185	185	CVOL	PCE	13	=	UG/L
MW-4	MW-4	F03E4	F03E4	12/13/02 11:05	180	180	CVOL	PCE	0.88	=	UG/L
MW-5	MW-5	F03E5	F03E5	12/12/02 12:45	187	187	CVOL	PCE	3.5	=	UG/L
MW-SF1	MW-SF01	F03E7	F03E7	12/12/02 14:15	191	191	CVOL	PCE	24	=	UG/L
MW-SF2	MW-SF02	F03D2DL	F03D2DL	12/12/02 15:05	192	192	CVOL	PCE	25	D	UG/L
MW-SF3	MW-SF03	F03D3	F03D3	12/13/02 10:40	180	180	CVOL	PCE	21	=	UG/L
MW-SF5	MW-SF05	F03D5	F03D5	12/12/02 15:35	145	145	CVOL	PCE	3.3	=	UG/L
MW-SF6	MW-SF06	F03D6	F03D6	12/12/02 15:50	124	124	CVOL	PCE	0.69	=	UG/L
MW-SF7	MW-SF07	F03D7	F03D7	12/13/02 9:20	98	98	CVOL	PCE	2.9	=	UG/L

Table C-2**PCE Ground Water Analytical Results - December 2002***Griggs and Walnut Groundwater Plume Site**Las Cruces, New Mexico*

StationID	Sampling Port	EPA CLP SampleID	CH2M HILL SampleID	Date Collected	Upper Depth	Lower Depth	Analysis Method	Parameter	Result	Qualifier	Unit
MW-SF8	MW-SF08	F03D8	F03D8	12/13/02 9:05	94	94	CVOL	PCE	8.1	=	UG/L
MW-SF9	MW-SF09	F03D9	F03D9	12/13/02 9:45	196	196	CVOL	PCE	0.5	U	UG/L
MW-SF10	MW-SF10	F03D0	F03D0	12/13/02 10:10	199	199	CVOL	PCE	21	=	UG/L

Notes:

= Detected analyte concentration
CVOL Volatile Organic Compounds (TCL) which is by Contract Laboratory Program (CLP) methodology
D Result is from a diluted sample
J Estimated Value
L Reported result is below the contract required quantitation limit
U Not detected at the reported quantitation limit
UG/L Micrograms per liter
v Low biased. Actual concentration may be higher than reported concentration.